PARENTING STYLES AND PSYCHOPATHIC TRAITS DEMONSTRATE DIFFERENTIAL RELATIONSHIPS AND MEASUREMENT INVARIANCE ACROSS HISPANIC AND NON-HISPANIC MALE OFFENDERS

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Using a strong invariance structural equation modeling approach, the current study explored the role of parental styles, along with age and IQ, on the expression of psychopathic personality facets in a large (N = 734) male sample of Hispanic and non-Hispanic offenders. Multiple group confirmatory factor analyses revealed evidence of strong invariance across ethnic groups for the psychopathy and parenting scales (CFI = .95; RMSEA .03). Person-centered analyses examining psychopathic versus non-psychopathic cases demonstrated that the former reported greater levels of dysfunctional parenting, particularly abuse. Structural equation modeling results highlighted differential relationships between the variables of interest as a function of race/ethnicity.

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CHAPTER 1

REVIEW OF LITERATURE

Adult personality and personality pathology are complex and multidimensional. As such, no single factor can fully account for the variance in general (i.e., normal range) or pathological personality among individuals. Research has implicated a dynamic interplay between both biological and environmental factors for shaping adult personality and highlights the importance of childhood as a time of rapid development and vulnerability (Jang, Dick, Wolf, Livesley, & Paris, 2005). As such, childhood is considered both a critical and a sensitive period for developmental impact (Britto & Perez-Escamilla, 2013; Fox, 2014; Scott, 1962). One influence that consistently predicts childhood outcomes is parenting practices, particularly parenting styles (Guajardo, Snyder, & Peterson, 2009; Lewis, 2005). Parenting styles are the behaviors employed by primary caregivers when caring for children, both biological and non-biological. These behaviors are variable and fall along a continuum of adaptive to maladaptive. Parenting styles are thought to influence the attachment style of the child, which reflect the observable behaviors that the child employs when in the presence of their primary attachment figure (Fearon & Roisman, 2017; Straus, 1964).

While it appears that the parenting style construct (i.e., its dimensions) reflects the same thing for mothers and fathers, it is also the case that the effects of mother versus father parenting styles on child behavior can differ to some degree (Fagan et al., 2014). There is research demonstrating that the sex of the parent may differentially impact outcomes of the child; however, the data are mixed, such that at times same-sex parent-child interactions appear to be more developmentally impactful than opposite-sex parent-child interactions, while other times there are no differences (Bandura & Walters, 1959; Eisenbarth et al., 2018; Lytton & Romney,

1991). Recent research suggests that the maternal parent is more likely to engage in adaptive parenting practices (Fivush, Marin, McWilliams, & Bohanek, 2009; Forehand & Nousiainen, 1993); however, outcomes may be differentially predicted by parenting sex, such that emotion regulation is more impacted by the maternal parents, while antisocial behaviors are more predictive of paternal parenting (Chang et al., 2003).

Although less researched, race/ethnicity status may also be linked to differential prediction of parental style on children's outcomes (Eun, Paksarian, He, & Merikangas, 2018; Pinquart & Kauser, 2018; Varela, Vernberg, Sanchez-Sosa, Riveros, Mitchell, & Mashunkashey, 2004). Some of the current research suggests that low parental warmth and overly permissive parenting are universally predictive of increased pathology across race/ethnicity; however, other research with Hispanic individuals demonstrates an increase sensitivity to low paternal warmth and less aversive effects from authoritarian parenting. As such, the current study aimed to further explore the role of racial/ethnicity with respect to parenting styles and personality.

Overall, both parenting practices and attachment styles are predictive of a breadth of outcomes, particularly psychological and personality functioning (Mickelson et al., 1997), and thus remain important avenues of research for understanding the development of personality pathology.

Parenting and Attachment Theory

Most developmental psychologists and respective models of human development agree that childhood is a critical time period for skills acquisition and psychological maturation (Britto & Perez-Escamilla, 2013; Fox, 2014; Scott, 1962), such that without stimulation and nurturing, various deficits can develop (Britto & Perez-Escamilla, 2013). The salience and potency of learning and development during childhood has led to a significant focus on interpersonal

relationships during youth, specifically caregiving relationships. Consistently, the quality and the form of caregiving relationships in childhood predict developmental trajectories and psychological outcomes (Guajardo, Snyder, & Peterson, 2009; Lewis, 2005).

Global parental involvement and rearing styles have long been evidenced within the literature as impactful variables influencing multifaceted aspects of childhood development (Nolivos & Layva, 2013; Salmon & Reese, 2016; Zaman & Fivush, 2013). Often, caregiving quality is evaluated by attachment styles, observed traditionally between mother-child dyads. Attachment theory was widely drawn upon in the 1950's and continues to be critical for understanding why early socioemotional relationships with caregivers is predictive of both adaptive and dysfunctional psychological and functional outcomes. The theory postulates that warm, approachable and responsive parents enable children to feel secure within their environment, which subsequently fosters the development of prosocial behaviors and cognitions (Ainsworth, 2010; Ainsworth & Bowlby, 1954; Bowlby, 1969). When these parental factors are lacking, or absent, there is an increased probability for pathology to emerge. Moreover, parental bonding in childhood is predictive of secure attachment styles in adulthood (Fearon & Roisman, 2017).

Attachment theory was largely based in evolutionary psychology, stating that children seek out contact and comfort from their parents or caregivers to increase their chances of survival. Reliably, research efforts have demonstrated several styles of parent-child attachment styles: secure, insecure-avoidant, insecure-resistant/ambivalent, and insecure-disorganized (Fearon & Roisman, 2017). Patterns of secure and disturbed attachment in adult samples largely reflects what is seen in children (Mickelson et al., 1997), though the attachment domains in this

case are broadly referred to as secure, avoidant, and ambivalent (or anxious) attachment (with disorganized attached reflecting a mix of the two latter styles).

Based largely on the work of Ainsworth and Bowlby, secure attachment was traditionally operationally defined via observation of children who are warm and engaging and seek security from their attachment figure (i.e., parent or caregiver), but will also explore their environment. Secure children have primary caretakers who are responsive, caring, and provide appropriately structured environments. Avoidant or anxious attachment stems from a relationship with both overly permissive or controlling parenting practices and is characterized by children that do not seek comfort in the presence of their primary attachment figure. Resistant or ambivalent attachment is predicted by inconsistent and overly harsh parenting behaviors and results in children who are 'clingy' and demonstrate ambivalence towards their attachment figure. Lastly, disorganized attachment is often associated with children that have experienced abuse or maltreatment. Children with a disorganized attachment style do not demonstrate any clear patterns when interacting with their attachment figures. Their behavior is often observed to be chaotic and confusing. Evidence suggests that it is the least secure form of attachment and is associated with the poorest outcomes. (Ainsworth, 2010; Ainsworth & Bowlby, 1954; Bowlby, 1969).

Attachment determined behavior is evident in infants and toddlers and is also predictive of adult attachment relationships in close interpersonal contexts. The literature suggests that attachment style is relatively stable across the lifespan, evidenced by findings that attachment styles observed in childhood are predictive of adult attachment behavior. This continuity is based on the development of internal working model of self and others in childhood which serves as a guide for engagement behaviors in adult relationship (Brumburgh & Fraley, 2006; Pascuzzo,

Cyr, & Moss, 2013). Indeed, adults with secure childhood attachment typically develop to engage in secure and healthy interpersonal relationships in adulthood. Moreover, avoidant attached children often engage in adult relationships characterized by dismissiveness and emotional disconnection. These individuals are not inclined towards physical affection and may engage in a withdrawn manner (Mikulincer, Gillath, Shaver, 2002; Waters, Weinfield, Hamilton, 2000b).

Ambivalent insecurely attached children display anxious attachment in their adult connections illustrated by entangled interpersonal patterns. More specifically, these individuals display enmeshment and codependence. They also may be overbearing, intrusive, and set unrealistic expectations in adult relationships. Lastly, disorganized attachment styles in childhood are predictive of adult attachment behavior that encompasses high risk behaviors, chaos, and withdrawal. This consistent attachment patterns across childhood to adulthood provides evidence for the vitality of attachment theory in understanding personality development and interpersonal relationship regulation (Mikulincer, Gillath, Shaver, 2002; Waters, Weinfield, Hamilton, 2000b).

Importantly, attachment styles have demonstrated differential relationships with psychological outcomes and parenting behavior. Specifically, secure attachment has been consistently associated with developmental trajectories of prosocial behavior, healthy peer relationships, and higher self-esteem (Gross, Stern, Brett, & Cassidy, 2017; Shaver & Mikulincer, 2002; Mikulincer & Shaver, 2007). In contrast avoidant-attached children tend to develop into less confident, withdrawn, and restrained individuals; however, children with this attachment style are also at risk for exhibiting antisocial and deviant behaviors (Walsh et al., 2018). Ambivalent-attachment has demonstrated predictive relationships with externalizing

behaviors and disorganized-attachment shows strong associations with hostility, impulsivity, disorganization, and proclivity towards violence (Collins & Feeney, 2000).

In a study conducted by Jones and Cassidy (2014) both maternal and paternal parental attachment styles were examined in relation to adolescent's usage of their parents as a secure base. Using parents as a secure base is normative behavior among youth and suggests that the child is monitoring parental behavior as an indication of what their own behavior in a given situation should be. Results of bivariate correlations suggested that mothers who display avoidant attachment were less likely to be used as a secure base, while fathers who displayed an anxious attachment relationship were less likely to be used as a secure base by their children. The authors suggest that parental attachment styles serve as a model for their children on using, or not using, a secure base, which then predicts the prevalence of their children's usage of their parents as a secure base. Importantly, these results suggest differential relationships between the sex of the parent, the child's perception of them, and the child's behavior in reaction to the parent (Jones & Cassidy, 2014).

Thus, it appears that children begin to develop an attachment style via observation of their attachment figure and their parenting style. This modeled acquisition is further supported by social learning theory (i.e., modeling), which postulates that behavior is learned through the observation and imitation of other people (Bandura & Walters, 1959). Further evidence for this can be found in social learning theory intervention research, which demonstrated that the quality of parent-child relationships was significantly improved with the addition of a social learning theory-based intervention. However, aspects of attachment involve more than modeling (O'Connor, Matias, Futh, Tantam, & Scott, 2013). Specifically, research suggests children begin to internalize their style of attachment and adopt it as their internal working model for

interpersonal relationships and interactions in a relatively stable manner across their lifespan (Brumburgh & Fraley, 2006; Pascuzzo, Cyr, & Moss, 2013).

Parenting Style

While attachment with parental figures have demonstrated reliable differential relationships with psychological outcomes, there is another approach for examining child-parent socioemotional relationships (Lewis, 2005). Parental style is considered to be broader than, and to influence, attachment and captures an overall manner in which a parental figure interacts and relates to their child. Parenting style is often divided into the dimensionally conceptualized styles of permissive/indulgent, neglectful/uninvolved, authoritarian, and authoritative parenting (Maccoby & Martin, 1983). While research largely focuses on these four styles, they often appear under various names and groupings; however, their operational definitions and relationships with external correlates remain the same. Moreover, it is important to note that these domains stem from two underlying continua reflecting level of parental warmth and control, and thus the styles of parenting reflect more so differences in degree (i.e., dimensional) and not in kind (i.e., categorical). Previous seminal work conceptualized parental styles existing along x-y axes continuums of power (or control) and support (or warmth).

Moreover, this conceptualization of parenting style is frequently measured in the research using the Parental Bonding Instrument (PBI) and the Measure of Parental Style (MOPS). The PBI assesses parenting styles across two factors of overprotection and care and categorizes parenting styles into four categories: high care-high control, high care-low control, low care-high control, and low care-low control (Karim & Begum, 2017; Tsaousis, Mascha, & Giovazolias, 2012). The PBI collects data for both the maternal and paternal parent and has demonstrated adequate reliability and validity in cross-cultural research; however, it has received some

criticism for its exclusion of abusive parenting behaviors (Parker, Roussos, Hadzi-Pavlovic, Mitchell, Wilhelm, & Austin, 1997). The MOPS is frequently used to capture maladaptive parenting styles across three factors: indifference, over-control, and abuse. The MOPS also pertains to both parent sexes and has demonstrated sound psychometric properties and utility among Hispanic samples (Eisenbarth, et al. 2018). Given the focus of the current study on pathological personality traits, the MOPS is a more advantageous measure than the PBI.

Regarding specific styles, parents with an indulgent or permissive style are typically low in parenting control and may provide little basic rules or structures for their children. On the other hand, these parents demonstrate high levels of warmth, often accepting the child; however, their non-directive approach may be damaging to the development and safety of the child. Indulgent/permissive parents often overindulge their children to the detriment of their self-development (Straus, 1964). A second type, uninvolved/neglectful parents, also demonstrate low levels of control and may be best conceptualized as unavailable and avoidant. The uninvolved parenting style is also characterized by low levels of parental warmth toward their child and can occasionally be abusive. Here, children's physical safety may be at risk and their psychological needs are often not met (Maccoby & Martin, 1983; Simons & Conger, 2007).

Third, the authoritarian parenting style is exhibited by caregivers who display high levels of control, setting strict expectations and rigid rules, while also providing low warmth. As such, children parented under this style often fear their parents and do not engage in appropriately autonomous development. Children may also demonstrate underdeveloped emotional expression and understanding due to emotionally unavailable parents.

Lastly, parents that employ the authoritative parenting style display moderate to high control along with increased warmth. Here, children experience appropriate levels of structure

and expectations, paired with emotional responsiveness to help foster autonomy development. This style is often indicated as being most adaptive and predictive of better functional psychological outcomes (Maccoby & Martin, 1983; Simons & Conger, 2007; Straus, 1964).

A considerable body of research has shown that parenting styles have differential relationships with psychological and behavioral outcomes. A longitudinal study (Luyckx, Tildesley, Soenens, Andrews, Hampson, Peterson, & Duriez, 2011), investigated predictive relationships between parental styles (i.e., indulgent, authoritative, uninvolved, authoritarian) and maladaptive behavioral trajectories for children over the course of 12 years. Specifically, outcome measures of substance use, antisocial behavior, and internalizing symptoms were collected. Results indicated that authoritative styles of parenting predicted the most adaptive outcomes in children across all outcome measures, followed by indulgent and authoritarian parents. Uninvolved parenting styles demonstrated the most maladaptive trajectories for children across all measures throughout the 12 years. Regarding specific outcomes, children with uninvolved parents showed two times the level of alcohol and tobacco consumption than children with authoritative or authoritarian parents. Furthermore, uninvolved and indulgent parenting styles were strongly predictive of antisocial behaviors, specifically for male children. Internalizing symptomology was most predicted by authoritarian parenting styles (Luyckx et al., 2011).

Additional research has yielded similar findings. A study examining 700 youth from pre-puberty to post-puberty demonstrated significant relationships between child perceptions of parental care styles and socioemotional development. Specifically, perceptions of an optimal style (e.g., authoritative) predicted less internalizing and externalizing symptomology. Notably, *paternal* style interacted with childhood externalizing behavior to predict adult externalizing

problems, while *maternal* style did not. These findings suggested the importance of perceived parental relationships, with a particular salience for paternal style for children with a predisposition to problematic externalizing behavior (Yee Ong, Eilander, Mei Saw, Xie, Meaney, & Broekman, 2018). The findings also suggest there may be differential associations between paternal versus maternal parental styles and child outcome.

While attachment and parenting behaviors are essential factors in considering outcomes for offspring, temperament and goodness-of-fit, are also of critical importance. Temperament is considered moderately heritable, though is influenced by psychosocial experiences (Kandler, 2012), and reflects an individual's relatively stable and longstanding manner of interacting with the world. This is comprised of personality features, individual differences, and behavioral and emotional styles (Buss & Plomin, 1975; Bird, Reese, & Tripp, 2006). The goodness-of-fit idea refers to the bidirectional relationships between the environment and the individual. In the context of parenting, attachment style and parenting style are important but perhaps of even greater importance is the goodness of fit between parenting style and child temperament (Bird, Reese, & Tripp, 2006; Thomas & Chess, 1977; Thomas, Chess, & Birch, 1968). As such, child rearing outcomes must also be conceptualized in the context of both the biological temperament of the child and the parent-child fit. Also important to consider, is the well evidenced understanding that behavior is the product of complex gene-environment relationships and interactions (Bronfenbrenner & Ceci, 1994; Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Scarr & McCartney, 1983), and that parent-child interactions are bidirectional. Thus, outcomes are shaped by these dynamic transactions and not from unidirectional influence (Tucker-Drob & Harden, 2013).

Parenting Styles and Parent Sex

Parenting research has demonstrated complicated relationships when differentiated by parent sex. Several empirical analyses have indicated no sex differences across parenting practices and outcomes (Lytton & Romney, 1991). This includes seminal attachment research suggesting that mothers and fathers do not vary their attachment practices across child gender until adolescence (Lieberman, Doyle, & Markiewicz, 1999). Additionally, research has demonstrated that poor parenting of mothers *and* fathers have shown worse outcomes for children: Namely that maladaptive maternal and paternal parenting practices are each harmful to children's psychological outcomes (Rothbaum & Weisz, 1994). However, the match between parent and child sex (Mothers-Daughters vs. Fathers-Sons) may have relevance for understand the effects of parenting styles on their children.

According to social learning theory, same-sex modeling is more salient between parent-child dyads than opposite-sex modeling (Bandura & Walters, 1959). Importantly, research shows that children spend more time with their mothers than their fathers (Russell & Russell, 1987) and that male children are more gender rigid, suggesting a heightened importance of father-son relationships and modeling (Lytton & Romney, 1991). As such, it is reasonable to assume that both parent and child sex is important in understanding relationships between parenting styles and offspring outcomes; however, this may be clouded by mothers contributing unevenly to caregiving practices.

Historically, parenting research has focused on mothers as children's primary attachment figure and assumed to be the parent engaging in the majority of the parenting practices, which of course introduces sampling bias. Nevertheless, this research has demonstrated that mothers, on an aggregate level, provide more nurturing and adaptive practices than fathers. One such practice

is that of parental reminiscing. Parental reminiscing style (PRS) is defined by linguistic characteristics that help predict child outcomes across several dimensions and must always be within the context of past events. One example of parenting reminiscing occurs when children engage in unwanted behaviors and are subsequently disciplined through a time-out. The reminiscing occurs when the punishment is over, and the parent involves the child in a detailed dialogue about the event. The parent may inquire about what made the child engage in the behavior, what their emotional experience was, and what the parent was thinking and feeling. Not only does PRS increase the child's understanding of their experiences, but language, memory, socioemotional, and psychological outcomes tend to be better for children who have parents that utilize a highly elaborative reminiscing style. An elaborative style is comprised of descriptive semantics and complex language syntax. Additionally, the use of questions during reminiscing dialogue is indicative of increased elaboration. This engages the child in the conversation and signals that their input is desired and valuable.

Characteristics of parental reminiscing style have also been examined between mothers and fathers. While the majority of PRS research has been conducted with mother-child dyads, when research does include father-child dyads the results indicate that mothers are typically more naturally elaborative than fathers (Zaman & Fivush, 2013). Due to naturally elaborative styles, results typically indicated that mothers are more successful at producing advantageous parental reminiscing outcomes. Parental reminiscing style has been frequently examined in parents as a unit (i.e., mothers and fathers together) and mothers independently; however, fathers are less studied independently. From the limited research available on PRS and gender effects, helpful styles of parental reminiscing appear to be more salient when coming from the mother. Laible (2004) found that maternal elaboration was the most consistent predictor of

socioemotional development. Additionally, it appears that mothers are consistently more elaborative than fathers (Fivush, Marin, McWilliams, & Bohanek, 2009).

There is also evidence to suggest that the child's gender matters as well. In a study examining maternal elaboration style, autobiographical skills, memory development, language and literacy, attachment with mother, understanding of self and others, and understanding emotion found that mothers are more elaborative with their daughters and, in particular, daughters who have a sociable temperament and who are securely attached (Fivush, Haden, & Reese, 2006). Some evidence suggest that mothers are more elaborative and detailed in reminiscing styles (Zaman & Fivush, 2013). In a study examining 42 parent-child dyads, results demonstrated mothers as being more elaborative, especially when discussing negatively charged emotional events. The study developers suggest that the advantageous developmental outcomes are therefore greater for children who receive reminiscing from their mother (Zaman & Fivush, 2013). At the same time, other evidence suggests that mothers and fathers do not differ in their delivery of PRS; however, their styles change based on the gender of their child, with increased elaborations when conversing with female children versus male children (Reese & Haden, 1996).

Parental reminiscing style is only a subcomponent of parenting behavior; however, it contributes to offspring wellbeing. As such, it is important to consider in the context of more general parenting behavior, namely parenting style. It may also help explain relationships found between parental sex, parenting styles, and personality. Moreover, additional research involving parent sex and parenting practices finds similar outcomes to parental reminiscing research, such that mothers appear to engage in higher frequencies of adaptive parenting practices. In a study comprised of 70 adolescents and both sex parents, adolescents reported their mothers engaging in more acceptance behaviors than fathers. Interestingly, outcomes appeared to be most impacted

by paternal acceptance, such that adolescents with low accepting fathers displayed the highest levels of anxiety and withdrawal, regardless of maternal acceptance (Forehand & Nousiainen, 1993).

In a study examining parental harshness (Chang, Schwartz, Dodge, McBride-Chang, 2003), 325 Chinese children and both sex parents were recruited, and parental harshness was examined with respect to child emotion regulation and aggression. Results suggested that *maternal* harshness was strongly predictive of emotional dysregulation in children, while *paternal* harshness predicted aggression. Interestingly, the results demonstrated that *paternal* harshness was more impactful on male children than female children, while *maternal* harshness did not demonstrate a differential relationship between child sex. The researchers hypothesize that parental harshness predicts negative emotional and externalizing outcomes through negative emotionality. They also suggest the importance of father-son relationships, mentioned as a salient relationship by preceding researchers (Chang et al., 2003). Interestingly, in a recent and similarly structured study to the present investigation, parenting styles was found to be more impactful from the same sex parent among a female offender sample (Eisenbarth et al., 2018).

Given the implied importance of parent sex, variability in results, and the underrepresentation of fathers within parenting literature, the current study examined parenting styles across parent sex.

Parenting Style and Hispanic vs Non-Hispanic Ethnic Identity

While it appears that parental sex may impact parenting style and outcomes of children, other demographic variables, such as race/ethnicity, appear to also be linked with differential relationships. In a large, nationally representative study (n = 6483), researchers examined the effects of parenting style on psychological outcomes by participant ethnicity and across parent

sex. Results indicated that across all ethnicities, low *maternal* warmth and control (neglectful parenting style) was predictive of depression, eating disordered behavior, and externalizing behavior and low *paternal* warmth and high control (authoritarian style) was predictive of alcohol use and phobia development in offspring. Participants with a Hispanic racial/ethnic identity differed from non-Hispanic participants on one outcome. For Hispanic subjects, low *paternal* warmth was predictive of increased anxiety among offspring, suggesting a possible implication of *paternal* relationships within Hispanic culture (Eun, Paksarian, He, & Marikangas, 2018).

In addition, results of a recently published meta-analysis (Pinquart & Kauser, 2018) suggested that parenting styles and associated outcomes may be more similar than different cross-culturally. When examined more closely, Hispanic offspring reared by authoritarian parents displayed less negative outcomes than non-Hispanic offspring (i.e., academic achievement); however, maladaptive consequences still occurred (i.e., internalizing symptoms). Interestingly, additional research suggests that Hispanic parents tend to use an authoritarian parenting style with greater frequency than non-Hispanic parents, which may help explain less detrimental outcomes based on a cultural acceptance and expectation (Varela, Vernberg, Sanchez-Sosa, Riveros, Mitchell, & Mashunkashey, 2004). Furthermore, permissive parenting predicted heightened externalizing behaviors that was specific to Hispanic participants. Importantly, across all racial and ethnic groups, uninvolved/neglectful parenting demonstrated the poorest outcomes, while healthy (authoritative) parenting style predicted the lowest levels of internalizing and externalizing symptomology and the highest level of academic achievement (Pinquart & Kauser, 2018).

Given that dissimilar outcomes have appeared across multiple large-scale studies, the

current study aims to provide additional examination of parenting styles and outcomes across Hispanic and non-Hispanic adults. Moreover, considerable research has been carried out with non-clinical samples, though the literature suggests that poor parenting style has great relevance for understand development of psychopathology in clinical (De Clercq et al., 2008; Russ et al., 2003) and offender (Eisenbarth et al., 2018) samples, personality pathology in particular. The current study focused on offenders who varied in terms of psychopathic personality features.

Psychopathy

The broad parenting styles literature demonstrates the salience of parent-child interactions and relationships on psychological outcomes, though less research has examined how parental styles are linked to severe personality pathology and criminal behavior. More specifically, research is emerging that suggests psychopathy, a disorder fundamentally linked to troubled interpersonal relationships, is associated with disturbed parenting styles (Eisenbarth et al., 2018; Farrington 2006) and attachment (Walsh et al., 2018).

Modern research on psychopathy has progressed exponentially due to the advent of the Psychopathy Checklist (PCL: Hare, 1985) and its revisions (PCL-R; 1991; 2003). Additionally, this structured assessment has aided in the conceptualization of psychopathy and expanded a traditional two-factor model to a more nuanced four-factor model (Hare & Neumann, 2008). The PCL-R and it modern derivatives (e.g., Psychopathy Checklist-Screening Version, Hart, Hare & Cox, 1995; Hare Self-Report Psychopathy Scale (SRP), Paulhus, Hare, & Neumann, 2016) have provided reliable and valid assessments of psychopathic personality, as well as an accepted conceptual approach for this area of research by synthesizing seminal clinical observations and theories (e.g., Arieti, 1963; Cleckley, 1976; Karpman, 1948) along with Hare's extensive empirical research on the construct (Hare, 2003). The PCL-R and its derivative scales

mathematically represent psychopathy as a superordinate construct underpinned by four correlated dimensions capturing manipulative and deceptive interpersonal style (*Interpersonal*), calloused, remorseless use of others (*Affective*), parasitic and impulsive lifestyle orientation (*Lifestyle*), and chronic dissocial attitudes and behaviors (*Antisocial*) that are inherent to the construct.

Model based factor analysis and structural equation modeling (SEM) have demonstrated that the four-factor model yields good fit across clinical and community samples (Mahmut & Menictas, 2011; Neumann et al., 2015; Salekin, Brannen, Zalot, Leistico, & Neumann, 2006; Zwets, Hornsveld, Neumann, Muris, & van Marie, 2015). Furthermore, empirical evidence provides support for emergent differential relationships across factors of psychopathy that are uniquely predictive of theoretically relevant external correlates, including fearlessness and low trait anxiety (Neumann et al., 2013), cognitive functioning (e.g., Baskin-Sommers et al., 2015; Neumann & Hare, 2008; Vitacco et al., 2005), substance and alcohol use (Magyar et al., 2011; Neumann & Hare, 2008), increased proclivity towards violence and aggression (Olver, Neumann et al., 2018; Salekin, Rogers, & Sewell, 1996; Vitacco et al., 2005), and criminal recidivism, antisociality, and calloused affect (Gendrau, Goggin, & Smith, 2002; Olver, Neumann et al., 2018; Hare, 2003).

To-date, psychopathy is viewed as a clinical construct characterized by a pattern of both covert (e.g., low interpersonal warmth, lack of empathy, callous use of others, amorality) and overt (e.g. impulsivity, recklessness, aggression) antisocial personality traits and tendencies (Falkenbach, Poythress, & Creevy, 2008; Hare, 2003; Neumann, Hare, & Newman, 2007; Polaschek & Daly, 2013; Serafim, de Barros, Castellana, & Gorenstein, 2014; Vitacco, Neumann, & Jackson, 2005). The construct of psychopathy is dynamic and incorporates the

complexities of human personality (Burns, Roberts, Egan, & Kane, 2015), and thus, no single factor can fully account for the development of psychopathic traits, nor can it be concluded that psychopathy is a categorically discrete disorder. Rather, psychopathy is better conceptualized across a continuum, with individuals experiencing varying levels of psychopathic propensities (Hare & Neumann, 2008; Polaschek & Daly, 2013).

Additionally, in cross cultural research the construct of psychopathy has demonstrated robustness (Gatner, Blanchard, Douglas, Lilienfeld, & Edens, 2018). More specifically, when the PCL-R is compared with other measures of psychology (i.e., the Psychopathic Personality Inventory and the Levenson Self-Report Psychopathy Scale), the PCL-R shows the most cross-cultural validity (Gatner et al., 2018). While additional multicultural research examining psychopathic traits is needed, these results demonstrate preliminary evidence of the PCL-R as a valid measure across racial and ethnic groups and suggest that psychopathic traits are not limited to one demographic subgrouping. When the four-factor model was specifically tested within a Hispanic female offender sample (Eisenbarth et al., 2018), it demonstrated adequate fit, as well in a mega-sample study of Aboriginal and non-Aboriginal Canadian male offenders (Olver et al., 2018), and a mega-world sample (Neumann et al., 2012). These studies suggest that the PCL-R and its derivatives are appropriate to use with multiple racial and ethnic grouping. The present study aimed to add to the growing literature on invariance of the PCL-R across Hispanic and non-Hispanic offenders.

Maladaptive and Abuse Parenting and Psychopathy

Research on the links between parenting behaviors and psychopathic trait expression has demonstrated that maladaptive parenting practices are predictive of increased global psychopathy scores (Eisenbarth et al., 2018; Forouzan and Nicholls, 2015; Gao, Raine, Chan, Venables, &

Mednick, 2010); however, less is known about the differential relationships with each facet of psychopathy. Preliminary data suggests that the antisocial facet may be most predicted by poor parenting practices (Dargis, Newman, & Koenigs, 2016; Molinuevo, Pardo, Gonzalez, & Torrubia, 2014; Poythress, Skeem, & Lilienfeld, 2006). However, other psychopathic features (i.e., callous-unemotional traits and aggression) have also been shown to be tied to parenting practices, such as controlling, overly harsh, excessively permissive, and neglectful and/or abusive parenting styles (Fite, Greening, & Stoppelbein, 2008; Gao et al., 2010; Llorca, Richaud, & Malonda, 2017; Waller & Hyde, 2017). In contrast, warm, supportive, supervisory, and appropriately involved parenting behaviors are predictive of decreased psychopathic traits (McDonald, Dodson, Rosenfield, & Jouriles, 2011).

Early traumatization and aversive events are also global risk factors in the development of adult maladaptive behavior (Krischer & Sevecke, 2008). A study conducted with 194 violent male offenders found that physical abuse, emotional abuse, and sexual abuse in youth led to elevated psychopathy (Borja & Ostrosky, 2013). In an additional study, the Childhood Trauma Questionnaire (CTQ) was administered to measure maltreatment in childhood. Using a male juvenile offender sample Krischer and Sevecke (2008) found that youth who experienced a previous trauma displayed increased psychopathic traits in comparison to youth with no trauma history. Further research with a juvenile sample displayed similar findings that childhood maltreatment, in the form of physical abuse, increased levels of both aggression and psychopathy (Kolla, Malcolm, Attard, Arenovich, Blackwood, & Hodgins, 2013). Moreover, individuals who experienced broad maltreatment in childhood endorsed heightened psychopathy compared to individuals who have not experienced maltreatment (Ometto, Approbato de Oliveira, Milioni, dos Santos, Scivoletto, Busatto, Nunes, & Cunha, 2016).

Comparable conclusions have been drawn between maltreatment in youth and the presentation of psychopathy in adult populations. In a sample of 233 adult males with sexual offense convictions, childhood maltreatment in any form (i.e., emotional, sexual, and physical abuse) was associated with higher psychopathy scores measured by the PCL-R (Graham, Kimmonis, Wasserman, & Kline, 2012). Further research on adults has determined psychopathy was a product of earlier physical, emotional, or sexual abuse. Results suggested that childhood maltreatment, in any form, led to heightened traits of psychopathy. These researchers hypothesized that abuse in childhood creates a pattern of maladaptive responses to stimuli and situations, which can manifest as psychopathy in adulthood (Schimmenti, Di Carlo, Passanisi, & Caretti, 2015).

Mechanisms underlying the relationship between maltreatment and traits of psychopathy suggest poor emotional parental bonding and emotional dysregulation as possible explanations (Borja, & Ostrosky, 2013; Burns, Roberts, Egan, & Kane, 2015; Goa, Raine, Chan, Venables, & Mednick, 2010). In addition, evidence suggests that early experiences of maltreatment promote deficits in cognitive and affective functioning (Bak, Krabbendam, Janssen, de Graaf, Vollebergh, & van Os, 2005), which could manifest as decreased behavioral control and emotional regulation abilities, characteristic of psychopathy. Moreover, given the evidence that psychopathy is characterized by heightened levels of aggression (Falkenbach, Poythress, & Creevy, 2008; Vidal, Skeem, & Camp, 2009), maltreatment may increase psychopathic traits through modeled behaviors of aggression (i.e., social learning theory of aggression) (Bandura, 1978; Heyman & Smith Slep, 2002; Lansford, Miller-Johnson, Dodge, Bates, & Pettit, 2007).

Aside from abuse, researchers have explored other forms of distress and maltreatment in childhood. Low levels of parental bonding, low parental protection, and children being separated

from their parents at a young age were all positive predictors of psychopathy for both males and females (Gao, Raine, Chan, Venables, & Mednick, 2010). Forouzan and Nicholls (2015) examined childhood experiences and psychopathy in a female offender sample. This sample constituted 82 adult women who were removed from their home during childhood. The results indicated a predictive relationship between higher scores of psychopathy and behavioral disturbances, exposure to maltreatment, and poor parental relationships in childhood. These psychological distinctions were evident even in their youngest measured group (0-5 years old) (Forouzan & Nicholls, 2015).

Additional research efforts have investigated psychopathy outcomes predicted by maladaptive parenting styles. In a comparative analysis using two offender samples those who perceived their childhood relationship with their parent as indifferent or negative in nature had higher psychopathy scores than those who reported healthy perceived parental relationships. Abuse from identified caregivers was also predictive of higher scores on the PCL-R (Bailey & Shelton, 2014). Results from a non-offender sample indicated that individuals who self-reported controlling or uncaring parental relationships scored higher on a measure of psychopathy traits (Blanchard & Lyons, 2016). Both studies suggested that maladaptive parenting styles across offender and community samples were predictive of psychopathic traits, indicating the salience of parenting regardless of sample variations.

Further, empirical investigation conducted by Jonason and Lyons (2013) examined dark triad traits (i.e., Machiavellianism, narcissism, and psychopathy) and parental care styles. Using a large community sample (n = 352), path model results indicated that quality of parental care predicted dark triad traits through adult patterns of attachment (i.e., interpersonal style). This may suggest that children learn their styles of social interaction from their caregiving

relationships (i.e., modeling) (Jonason & Lyons, 2013) and adopt it into their own internal working model. A similar pattern was also found in a large undergraduate sample (N = 181) indicating that poor parental care was predictive of several domains of psychopathology, including affective and interpersonal traits of psychopathy (Kimbrel, Nelson-Gray, Mitchell, 2007). While these findings parallel other research trends, the provide insight into differential relationships between parental styles and facets of psychopathy.

Additional investigators have focused their attention on understanding differential relationships between parental styles and specific psychopathy facets or general personality traits that together represent the broader psychopathic personality syndrome. Among the personality literature, it is well documented that traits of psychopathy covary with a particular set of big five personality characteristics (i.e., extraversion, agreeableness, openness, contentiousness, and neuroticism; Widiger & Trull, 1997), namely lower levels of agreeableness and conscientiousness and higher levels of neuroticism (Lynam & Miller, 2014). Of importance, it also appears in the attachment literature that children observed to hold a secure attachment style early in life scored higher in adulthood on agreeableness and conscientiousness and lower on neuroticism, while those observed to have an insecure attachment in childhood scored lower on agreeableness and conscientiousness and higher on neuroticism (Young, Simpson, Griskevicius, Huelsnitz, & Fleck, 2019). This suggests that insecure parental attachment predicts the same constellation of personality traits that correlates with psychopathy.

Moreover, in a large community sample (n = 553) adults completed self-report measures of perceived parental styles and personality traits. Results yielded several predictive relationships. Specifically, reported parental neglect was predictive of lower levels of extraversion, agreeableness, conscientiousness, and openness and higher levels of neuroticism

and emotional instability. Perceived negative parental relationships were predictive of lower authenticity. While not clinically indicated, these findings suggest that parental bonding is impacting facets of personality that, when extreme, may lead to psychopathic propensities (Robinson, Lopez, & Ramos, 2014).

A study using a sample of 75 juvenile male offenders also examined differential relationships between parenting and traits within the construct of psychopathy. Data was collected using retrospective reporting and asked participants to report their perceptions of their caregiver's parenting practices. This study also utilized the Psychopathy Checklist-Youth Version, which allowed for the examination of psychopathic traits across the four-factor model. Not surprisingly, perceptions of inconsistent and permissive parenting were predictive of increased psychopathy scores. When examined by factors, a significant relationship was only found for the antisocial and lifestyle facets (Molinuevo, Pardo, Gonzalez, & Torrubia, 2014).

In three large offender samples, results of two studies indicated that the lifestyle and antisocial facets were found to be most predicted by abusive parental practices (Dargis, Newman, & Koenigs, 2016; Poythress, Skeem, & Lilienfeld, 2006), while the other suggested that the interpersonal, lifestyle, and antisocial facets were all strongly predicted by abusive parenting behavior (Graham, Kimonis, Wasserman, & Kline, 2012). As such, the lifestyle and antisocial facets appears to be reliably predicted by abuse. The discrepancy in findings related to the interpersonal facet may be due to sample differences. All three studies utilized a male offender sample, however Graham et el, (2012) examined sexual offenders. Moreover, their findings suggest that rapists, in particular, obtained elevated scores on the interpersonal facet of psychopathy regardless of an abuse history. Thus, this may have artificially inflated this facet. While possible, interpersonal traits of psychopathy have also shown elevations in a non-clinical

sample (Kimbrel, Nelson-Gray, Mitchell, 2007), suggesting that the relationship between parenting style and psychopathy facets required further investigation.

In a study focusing more broadly on parenting styles and psychopathy, indifferent and over-controlling parenting styles were most predictive of the antisocial facet of the PCL-R. This finding was consistent across both sexes of parents (Eisenbarth, Krammer, Edwards, Kiehl, Neumann, 2018). Notably, this study utilized a female offender sample and examined sex-based relationships between both mother and father parenting styles and psychopathy. The findings suggested that maternal parenting styles were more salient, and thus provided some support to the idea that same-sex parent-child relationships may be more impactful than their opposite-sex counterpart. While it appears that the antisocial facet is emerging as a strong outcome of poorer parenting behaviors, additional differential analyses are needed to clarify these relationships. Therefore, the current study measured all four psychopathy facets in relation to parenting styles.

Parenting Styles, Cognition, and Psychopathy

Interestingly, there are similar patterns between cognitive functioning and parenting styles as there are between parenting styles and psychopathy, such that controlling, overly harsh, excessively permissive, and neglectful and/or abusive parenting styles are predictive of decreased cognitive functioning (i.e., executive functioning, intellectual abilities), while warm, supportive, supervisory, and appropriately involved parenting behaviors are predictive of increased cognitive abilities (Chong, Chittleborough, Gregory, Mittinty, Lynch, & Smuthers, 2016; Sethna, Perry, Domoney, Iles, Psychogiou, Rowbotham, Stein, Murray, & Ramchandani, 2017). Given these similar associations, it is reasonable to speculate whether psychopathy and cognitive functioning have a clear association in the context of parenting styles.

With respect to the link between psychopathy facets and cognitive functioning, the empirical findings suggest an emerging differential pattern of associations (e.g., Baskin-Sommers et al., 2015; Salekin et al., 2004; Vitacco et al., 2005). Neumann and colleagues have demonstrated that cognitive functioning is differentially associated with the facets of psychopathy (e.g., Salekin et al., 2004). A particularly intriguing set of associations concerns the interpersonal and affective facets which have shown positive and negative associations, respectively, with cognitive functioning (Baskin-Sommers et al., 2016; Salekin et al., 2004; Vitacco et al., 2005). Moreover, understanding the relationship between cognitive functioning and psychopathy is of particular importance given that deficits in emotion regulation, which is closely tied to attachment disturbances, covaries with increased psychopathic traits and lower cognitive abilities (Casey, Rogers, Burns, & Yiend, 2013; Donahue, McClure, & Moon, 2014; Garofalo et al., 2018; Opitz, Lee, Gross, Urry, 2014). Thus, the current project aims to explore differential links between parenting styles and psychopathic facets across parent sex, while also exploring the impact of cognitive ability.

Several mechanisms have been proposed as underlying the relationship between parenting styles and psychopathy, namely modeling (i.e., social learning theory). As previously discussed, social learning theory postulates that learning occurs when a behavior is observed and then enacted. The social learning approach has been used to explain aggressive behavior (Bandura, 1978; Heyman & Smith Slep, 2002; Lansford, Miller-Johnson, Dodge, Bates, & Pettit, 2007). Social learning of maladaptive externalizing behaviors and poor emotion regulation strategies can lead to longstanding deficits in emotion processing difficulties (Casey, Rogers, Burns, & Yiend, 2013; Donahue, McClure, & Moon, 2014). Emotion regulation occurs as a result of a complex interplay between affective, cognitive, interpersonal and neurobiological

factors (Dvir, Ford, Hill, & Frazier, 2014). Moreover, developing adequate emotion regulation skills is considered paramount to normative psychosocial development. Failure to meet this milestone is a known risk factor for both internalizing and externalizing disorders (Hill, Degnan, Calkins, & Keane, 2006; Kim & Cichetti, 2010). Importantly, emotion regulation appears to have a clear relationship with cognitive functioning, such that higher intellectual abilities predicts better emotion regulation and processing (Opitz, Lee, Gross, Urry, 2014). As such, children with higher cognitive abilities, even with poor learning history of emotion regulation from their parents, may demonstrate better emotion regulation outcomes.

However, in the psychopathy literature, cognitive functioning does not demonstrate as clear of a relationship. Intelligence is often measured using standardized cognitive assessments that yield an individual's intelligence quotient (IQ). Within the literature, psychopathy and IQ yield mixed findings. Some studies find no relationships between cognitive functioning and proclivity towards violence (Walsh, 2004), while others indicate it as a relationship. In a study conducted by Bate, Boduszek, Dhingra, and Bale (2014) using a university sample, IQ moderated the relationship between psychopathy and emotional responding. Specifically, individuals higher on psychopathy with lower IQ scores demonstrated increasingly inappropriate or atypical emotional responding (Bate, Boduszek, Dhingra, & Bale, 2014). In contrast, a juvenile offender sample yielded results indicating higher IQ and higher psychopathy scores as additively predicting increased offending (Hampton, Drabick, & Steinberg, 2014). While these studies more suggest maladaptive outcomes in relation to cognitive function in the presence of psychopathic traits, they are predictive of dysfunction in opposite directions.

Additional research has provided support for the findings yielded by Hampton, Drabick, and Steinberg (2014). In a community sourced youth sample (n = 221), traits of narcissism were

strongly predictive of psychopathy traits. Moreover, higher intellectual functioning interacted with higher traits of narcissism to more strongly associate with conduct problems (McKenzie & Lee, 2015). In contrast, Salekin, Lee, Schrum Dillard, and Kubak (2010) found that IQ was neither a protective nor a risk factor for increased offending (Salekin, Lee, Schrum Dillard, & Kubak, 2010). The inconsistency of these findings have been posited by Salekin and colleagues (2004) to be indicative of a measurement error, such that psychopathy should be measured at the facet level in relation to IQ to yield more accurate relationships. When measured at the facet level, IQ was shown to have a positive correlation with the interpersonal facet and an inverse relationship with the affective facet (Salekin, Neumann, Leistico, & Zalot, 2004). Given that results have been consistently inconsistent, the relationship between IQ and psychopathy warrants further attention.

While the relationship between cognitive functioning and psychopathic trait presentation is less than clear, research provides more clarity on the relationship between parenting practices and youth IQ. In a study examining parenting practices and child IQ in the context of child temperament, 13,988 children (ages 24 – 47 months) and their mothers were recruited. Parenting practices and childhood temperament data was collected on first contact and IQ was assessed at age 8. Results of linear regression analysis, controlling for temperament, indicated that low parental warmth and high parental control was negatively predictive of IQ scores (Chong, Chittleborough, Gregory, Mittinty, Lynch, & Smuthers, 2016). While most parenting research focuses on maternal parenting styles, a study examining cognitive development in children ages 3-24 months (n = 192), father's interactions with their children were coded for parenting styles and compared to the child's cognitive functioning at age 24 months. Fathers who were coded as being more engaged, sensitive, and less controlling when interacting with their children,

predicted high scores on measures of cognitive functioning. This relationship controlled for the style of the maternal parent (Sethna, Perry, Domoney, Iles, Psychogiou, Rowbotham, Stein, Murray, & Ramchandani, 2017).

Moreover, Sosic-Vasic (2017) and colleagues explored the relationship between parenting practices and executive functioning in 169 children and adolescents. All youth completed the Erikson Flanker task to measure their executive functioning abilities. The primary caregiver (71% mothers) completed the Alabama Parenting Questionnaire to collect information regarding their parenting styles. Results indicated that higher parental involvement and responsibility taking was associated with less error on the executive functioning task (i.e., high scores). Additionally, parents with inconsistent parenting practices, particularly inconsistencies in discipline, were predictive of higher errors among youth (i.e., lower scores) (Sosic-Vasic, Kroner, Schneider, Vasic, Spitzer, & Streb, 2017).

While it appears that more adaptive practices of parenting are predictive of increase cognitive functioning, this relationship is likely impacted by moderating variables such as parental bonding and parental stress. It is important to consider these variables as contributing to a larger model, explaining the associations between parenting behavior and youth outcomes. In a study investigating longitudinal executive functioning outcomes adaptive parental behaviors were significant in predicting higher executive functioning; however, parental bonding and stress was also relevant. Here, 335 mothers, 261 fathers, and their children were recruited. Results demonstrated that low parental bonding across both parents predicted heightened parenting stress. Additionally, an indirect effect was determined in the negative direction for parental bonding and executive functioning through parenting stress (de Cock, Henrichs, Klimstra, Maas, Vreeswijk, Meeus, & Bakel, 2017).

Given these patterns, the current study investigated the relationship between IQ and psychopathy and also explored the contribution of IQ along with parenting practices in predicting features of psychopathy.

Goals and Objective of the Current Study

Evidence supports predictive relationships between styles of parenting and psychological outcomes, where specifically, maladaptive parenting styles predicts poorer psychological outcomes. In the literature, results also support an association between maladaptive parenting styles and psychopathic traits. Unfortunately, most studies have simply examined global psychopathy scores and have not examined whether there are differential relationships between poor parenting and specific features of psychopathy. Many of the previous studies were based on non-offender samples, where the level of psychopathy is lower. Furthermore, little research has examined whether differential associations between parenting styles and psychopathy show the same pattern in offenders who differ in race/ethnicity. Additionally, intellectual functioning appears to have a complex and varied relationship with psychopathic traits that stands to be understood. As such, the current study investigated differential relationships between perceived parental styles and facets of psychopathy, along with IQ, in a large male sample comprised Hispanic and non-Hispanic offenders. Moreover, the present study examined both maternal and paternal caregiving styles given the lack of research focused on paternal styles.

The current study tested several hypotheses. First, it was hypothesized that maladaptive parenting styles would be associated with an elevated level of psychopathy (i.e., psychopaths versus non-psychopaths). It was also hypothesized that abusive parenting styles in particular would differ most between those with psychopathy versus those without a psychopathy diagnosis when compared to the other maladaptive styles (indifference, over-control). Additionally, it was

expected that an overly controlling parenting style would show a lower correlation with psychopathic traits in Hispanic versus non-Hispanic offenders due to previous findings in the literature suggesting less adverse outcomes in Hispanic participants parented under authoritarian styles.

Structural equation modeling was used to examine the predictive role of maladaptive parenting on the four facets of psychopathy. It was hypothesized that both maternal and paternal maladaptive parenting styles would predict the lifestyle and antisocial facets to a greater extent than the affective or interpersonal facets. Second, it was expected that same-sex parent child dyads (i.e., father-son versus mother-son pairs) would be tied to the strongest predictive effects, which should be particularly true for Hispanic offenders, given the salience of paternal influence both within the culture and the literature.

Given a lack of prior research, we also explored whether IQ is predictive of psychopathy scores. However, based on the research from Neumann and colleagues (Baskin-Sommers et al., 2015; Salekin et al., 2004; Vitacco et al., 2005), it was expected that IQ would be positively linked with the interpersonal psychopathy facet and negatively linked with the affective facet.

CHAPTER 2

METHOD

Participants

Using the most sensitive a priori power analysis for our intended inferential statistics, a sample size of 59 participants was necessary to detect effects if effects were present ($d = 0.2$, $\alpha = .05$, $\beta = .80$; Faul, Erfelder, Buchner, and Lang, 2009). The current study used an archival sample of 745 currently incarcerated, male offenders; therefore, no concerns related to power were present. To meet inclusion criteria all participants were currently incarcerated offenders within a federal prison located in within the state of New Mexico in the United States. Participants all exceed the age of 18. All participants were male, and the average participant age was 34.07 years ($SD = 9.16$). Regarding racial demographics, 78.9% ($n = 576$) of participants identified as White/European American, 10.4% ($n = 76$) as Hispanic, 7.5% ($n = 55$) as Black/African American, 1.1% ($n = 8$) as Other, 0.3% ($n = 2$) as Multiracial, and 0.7% ($n = 5$) as Asian. In addition, 57.1% ($n = 419$) of participants indicated their ethnicity as Hispanic and 42.9% ($n = 315$) as non-Hispanic. Lastly, the average Intelligence Quotient (IQ) for the current sample was 96.76 ($SD = 13.22$), indicating a sample within the average range of intellectual functioning. See Table 1.

Procedures

The current study utilized an archival data set obtained by Dr. Kent Kiehl through the Mind Research Network. For the original study, Institutional Review Board (IRB) approval was granted, participant data remained anonymous, and informed consent was obtained. Participants were administered several measures to collect information regarding the constructs of interest, three of which will be used for the purposes of the present investigation. Specifically, the current

study will use data collected from the administration of the Psychopathy Checklist-Revised (PCL-R), the Wechsler Adult Intelligence Scale, Fourth Edition (WAIS-IV), and the Measure of Parental Style (MOPS). Participants were also asked basic demographic questions, such as, age, race, and ethnicity. As indicated by the IRB through the University of North Texas, a separate IRB application is not required for the current study given that the data arrived in de-identified form and is therefore not considered to be data involving human subjects.

Measures

Psychopathy Checklist – Revised (PCL-R)

The Psychopathy Checklist – Revised is semi-structured diagnostic interview designed to assess clinical symptoms associated with psychopathic personality pathology. It is comprised of 20 items administered by a trained examiner and rated on a 3-point scale from 0 to 2, with higher scores indicating higher psychopathic traits. A cutoff score of 30 is typically used to indicate clinically significant levels of psychopathy. The measure is considered to be well validated and reliable for determining levels of clinical psychopathy. The PCL-R produces an overall psychopathy score. Additionally, the PCL-R produces two factor scores: Interpersonal/Affective (Factor 1) and Lifestyle/Antisocial (Factor 2). The PCL-R has demonstrated high reliability with an overall alpha coefficient of .92 and factor alpha values exceeding .82 (Hare, 1985; Hare, 2003; Neumann, Hare, Johansson, 2013).

Using all items, the present study yielded a total score Cronbach's Alpha of 0.81, with a mean score of 20.51, *SD* = 6.68, responses ranged from 3.20 to 37.90. Given the limitations of Alpha and that it is not an indicator of scale unidimensionality (Schmitt, 1996), mean inter-item correlations (MICs) were also computed. Items within the total scale yielded an acceptable MIC of 0.17. Regarding facet scales, the present study yielded an interpersonal Cronbach's Alpha of

0.68, with a mean item facet score of .51, *SD* = .48. Items within this scale yielded an acceptable MIC of 0.36. The affective facet scale derived a Cronbach's Alpha of 0.63, with a mean item value of .91, *SD* = .51. Items within this scale yielded an acceptable MIC of 0.27. The lifestyle facet scale produced a Cronbach's Alpha of 0.59, with a mean item score of 1.10, *SD* = .43. Items within this scale yielded an acceptable MIC of 0.23. Lastly, the antisocial facet scale yielded a Cronbach's Alpha of 0.62, with a mean item facet value of 1.43, *SD* = .46. Items within this scale yielded an acceptable MIC of 0.26. See Tables 2 to 4 for additional descriptive statistics.

Measure of Parental Style (MOPS)

The Measure of Parental Style is a 30-item self-report, retrospective measure designed to gather an individual's perceptions of their relationship with each parent (i.e., maternal and paternal). Participants respond to items on a Likert-scale from 0 (not true at all) to 3 (extremely true). Example items include "[my mother] ignored me" and "[my father] was critical of me." The measure was developed using a principal component analysis approach to factor items onto three subscales of parental style: indifferent, abusive, and over-controlling for each parent. Higher scores are indicative of a higher match to that style. The MOPS has demonstrated adequate reliability, generating alphas scores for all three subscales across both gender parents ranging from .76 to .93 (Parker, Roussos, Hadzi-Pavlovic, Mitchell, Wilhelm, & Austin, 1997).

Using all 15 items within the Maternal MOPS, the present study yielded a Cronbach's Alpha of 0.88 and an acceptable mean inter-item correlation of 0.37; however, the subscale scores are more meaningful. As such, the Maternal MOPS indifference subscale yielded a Cronbach's Alpha of 0.90 and a somewhat high mean inter-item correlation of 0.62, suggesting that some items may be gathering similar information. The mean item facet score on this subscale was .48, *SD* = .71. Numeric markers of normality were within acceptable limits. The

Maternal MOPS abusive subscale yielded a Cronbach's Alpha of 0.87 and a mean inter-item correlation of 0.60. The mean score on this subscale was .44, *SD* = .68. Numeric markers of normality were again within acceptable limits. Lastly, the Maternal MOPS over-controlling subscale yielded a Cronbach's Alpha of 0.59 and an acceptable MIC of 0.27. The mean score on this subscale was .99, *SD* = .98, with a range in scores from 0.00 to 12.00. See Tables 2 to 4 for scale descriptive statistics.

Using all 15 items within the Paternal MOPS, the present study yielded a Cronbach's Alpha of 0.91 and an acceptable MIC of 0.41. Moreover, the Paternal MOPS indifference subscale yielded a Cronbach's Alpha of 0.93 and a slightly high MIC of 0.71. The mean item facet score on this subscale was .77, *SD* = .97. Numeric markers of normality indicated an acceptable distribution. The Paternal MOPS abusive subscale yielded a Cronbach's Alpha of 0.91 and a MIC of 0.67. The mean score on this subscale was .71, *SD* = .92. Numeric markers of normality were within acceptable limits. Lastly, the Paternal MOPS over-controlling subscale yielded a Cronbach's Alpha of 0.55 and an acceptable MIC of 0.24. The mean score on this subscale was .90, *SD* = .72. Numeric markers of normality indicated distributions more consistent with normality. See Tables 2 to 4 for additional descriptive statistics.

Wechsler Adult Intelligence Scale, Fourth Edition (WAIS-IV)

The WAIS-IV was administered to assess participant's general intellectual abilities. The WAIS-IV is a standardized, norm-referenced (16-90 years) test used to sample a wide range of cognitive and information-processing abilities. The WAIS-IV consists of ten core subtests organized into four composite scores: Verbal Comprehension, Perceptual Reasoning, Working Memory, and Processing Speed. An individual's performance on the subtests produces four composite scores, which are then combined to produce the Full-Scale IQ Score (FSIQ). The

WAIS-IV yields a range of standard scores between 45 and 155 with average values between 90 and 109. The WAIS-IV is considered a well validated and reliable measure of cognitive functioning with subtest alpha values ranging from .55 to .88 and index scale alpha values ranging from .80 to .91 (Glass, Ryan, & Charter, 2010). Using the total score, within this sample, the WAIS-IV yielded a mean score of 96.76, *SD* = 12.22, indicating an average IQ score within the normal range. Numerical markers of normality were within normal limits. See Tables 2 to 4.

Data Analytic Plan

Descriptive statistics and inferential assumptions were first calculated and checked for all scales and subscales of the questionnaire measures used within the current study. ANOVA analyses were the conducted to examine between group similarities and differences across the constructs of interest. Manifest variable bivariate correlations were also analyzed to examine the predictive relationships between parenting styles, for both mothers and fathers, and psychopathy total and facet scores, as well as bivariate correlations to examine associations between parenting style, parental sex, IQ, and psychopathic traits across the whole sample. The primary analytic strategy involved a multiple group confirmatory analysis to determine invariance of measurement across Hispanic and non-Hispanic groups, followed by structural equation modeling, using a strong measurement invariance approach as in previous research (Eisenbarth, et al., 2018; Walsh et al., 2018), to precisely gauge associations between perceived parental styles and the four facets of psychopathy.

CHAPTER 3

RESULTS

Data Cleaning and Descriptive Analyses

Prior to analyses, all variables were entered into SPSS, labeled, recoded into numerical values, and examined for missing values, extreme values, and general integrity of the data set. Eleven cases were removed for having insufficient data (i.e., too much missing data) to merit inclusion. A total of 734 participants remained for analysis. The missing data from the remaining participants was examined using Little's MCAR test, chi-square for the PCL-R and MOPS measures. Regarding the PCL-R Little's MCAR test indicated that the data was not missing at random (*Chi-Squared* = 790.81, $p < .001$); however, two items from the measure had the highest percentage of missing data, Item 17: many short-term marital relationships, and Item 19: revocation of conditional release. As such, these items are not relevant to all participants and Item 17 is not loaded within the four-factor model. When re-analyzed excluding these two items, the data remained missing not at random; however, all items reflected less than 2% missing data. Regarding the MOPS, missing data was analyzed separately for the maternal and paternal portions of the scale, given that not all participants are from a two-parent household. Again, using Little's MCAR test, the Maternal MOPS scale demonstrated missing at random data, (*Chi-Squared* = 54.40, $p = .079$). The Paternal MOPS scale indicated that the data was not missing at random, (*Chi-Squared* = 60.89, $p = .030$); however, it is trending in the direction of random and an item analysis reflected even distribution of missing data.

Additionally, due to some cases with missing data on the MOPS, missing data analyses were conducted for those with (41%) versus those without (59%) missing data. The groups did not differ on the four PCL-R facet scores, $F(1, 732)$'s = 0.18 - 2.02, p's = .89 - .15, nor did they

differ on IQ, $F(1, 728) = 3.43$, $p = .064$, or race/ethnicity, $x(1)^2 = 0.049$, p = .825. There was significant difference in age, $F(1, 732) = 4.21$, $p = .04$, but this was a trivial effect (*eta2* = .00) regarding the age differences for those with ($M = 33.25$, SD = 9.44) missing data versus those without ($M = 34.66$, SD = 8.92). These results suggest that cases with missing data versus those with complete data can be treated similarly and included holistically in the analyses.

Furthermore, all variables were examined for skew, kurtosis, and reliability. Skewness was examined using a cutoff of 3.29 (Tabachnick & Fidell, 2013) and was found within acceptable levels for all variables. While skewness is within reasonable limits, these data are not measuring phenomenon that are normally distributed, thus some levels of skewness is to be expected. Furthermore, kurtosis was examined using a cutoff of 7 (Curran, West, & Finch, 1996), and was found to be well within acceptable levels for all variables. These values can be found in Tables 2 to 4. Homoscedasticity was checked using scatterplots and was also found to be within acceptable limits. As such, the data did not require transformation.

Means and standard deviations were calculated for participants' Intelligence Quotient (IQ), psychopathic traits at the total score and facet score levels, and maternal and paternal parental style across indifferent, abusive, and over-controlling dimensions. Results can be found above and within Tables 2 to 4. Bivariate correlations were calculated within all measures and subscales and across all measures and subscales. Intercorrelations among the PCL-R total and all subscales were significantly intercorrelated (Table 5). Similarly, all total and subscale scores on the MOPS Maternal and MOPS Paternal were intercorrelated (Table 6 and 7, respectively). Also, the proportions of Hispanic and non-Hispanic participants with elevated psychopathy traits (i.e, greater than or equal to 30; Hare, 2003), did not differ significantly, chi-square = 1.26, $p = .262$. Given the above information, the Hispanic and non-Hispanic participant groups were combined

for the bivariate correlation analyses; however, structural equation models were designed to compare Hispanic and non-Hispanic groupings across the variables of interest.

Measurement Invariance across Hispanic and non-Hispanic Cases

Strong Invariance Multiple Groups Confirmatory Factor Analysis (MGCFA)

Before comparing the Hispanic and non-Hispanic offenders on the PCL-R and MOPS variables, it was essential to show that there was measurement invariance first. That is, it is critical to determine that the two groups were equivalent in terms of factor structure (configural invariance), item-to-factor relations (metric invariance of discrimination parameters), and item thresholds (scalar invariance of extremity/difficulty parameters). Without such invariance, it is not possible to know that scores mean the same thing (Walsh et al., 2018). Using the PCL-R and MOPS items within one model, strong invariance MGCFAs (equal loadings & thresholds) were specified and tested to provide evidence of measurement invariance of the MOPS and PCL-R across the Hispanic and non-Hispanic groups. The strong invariance model results indicated excellent model fit (CFI = .95, RMSEA = .03), and thus evidence of strong invariance of the PCL-R and MOPS items across ethnicity (i.e., Hispanic and non-Hispanic). These results indicate that items discriminate equally well, and equivalent thresholds indicate that PCLR and MOPS mean scores reflect the same latent level of psychopathy and parenting behavior across samples. See Figure 1 and Figure 2.

Inferential Hypothesis Testing

ANOVA Analyses[1]

[1] Before running the ANOVAs, MANOVAs were run to check if there were interactions between psychopathy status and ethnicity for the mother and father MOPS DVs. As it turns out, the interactions for the mother MOPS, $F(3,505) = 2.37$, $p = .069$; Wilk's $\Lambda = 0.986$, $\eta^2 = .01$, and father MOPS, $F(3,433) = 1.05$, $p = .368$; Wilk's $\Lambda = 0.992$, $\eta^2 = .01$, were both non-significant.

One-way, between-groups ANOVA tests were conducted to assess for group differences between Hispanic and non-Hispanic participant groups on both the MOPS subscales and PCL-R total score and subscales. Hispanic and non-Hispanic participants, respectively, did not significantly differ ($F(1, 732) = 1.54$, $p = .21$) in terms of PCL-R total score ($M_{sum} = 20.78$, $SD = 6.38$, $M_{sum} = 20.16$, $SD = 7.04$). With respect to PCL-R facet scores (formatted as mean item ratings), the groups did not differ on the affective ($M = .91$, $SD = .50$ vs. $M = .91$, $SD = .52$), or lifestyle ($M = 1.12$, $SD = .43$ vs. $M = 1.09$, $SD = .43$) facets, respectively ($F(1, 732) = 0.00$, $p = .98$; $F(1, 732) = 0.87$, $p = 0.35$); however, PCL-R interpersonal, $F(1, 732) = 5.22$, $p = .02$, and PCL-R antisocial, $F(1, 732) = 19.44$, $p = .00$, were significantly different between Hispanic ($M = .47$, $SD = .43$; $M = 1.49$, $SD = .41$) and non-Hispanic ($M = .55$, $SD = .53$, $d = .17$; $M = 1.34$, $SD = .49$, $d = .33$) groups of participants, though these group differences reflected relatively small effect sizes.

Regarding the MOPS, most scales were similar between groups with two exceptions. Paternal indifference significantly differed across ethnic group, $F(1, 437) = 4.14$, $p = .036$, with Hispanic participants reporting higher levels of paternal indifference behaviors ($M = .69$, $SD = .93$) compared to their non-Hispanic counterparts ($M = .89$, $SD = 1.01$, $d = .21$), which was a small effect size. Additionally, maternal abuse varied by ethnic group, $F(1, 509) = 5.20$, $p = .023$, with Hispanic participants indicating lower levels of maternal abuse ($M = .38$, $SD = .59$) compared to their non-Hispanic counterparts ($M = .52$, $SD = .79$, $d = .20$), again suggesting a small effect size. Scale descriptive by ethnic group can be found within Table 3.

Additionally, participants were coded into groups of elevated PCL-R total score and non-elevated PCL-R total score based on the clinical recommendation for the syndrome of psychopathy outlined by Hare in the PCL-R manual (Hare, 2003). As such, participants were

grouped in terms of psychopathic (PCL-R $\geq$ 30) versus non-psychopathic (PCL-R < 30) status. This allowed for between group analyses. First, a one-way ANOVA was conducted to determine MOPS scores between psychopathic and non-psychopathic participants on the MOPS Maternal total score. The psychopathic group scored significantly higher (M = 11.66, SD = 9.99) than the non-psychopathic group (M = 8.71, SD = 8.14) on endorsement of problematic maternal parenting behavior $F(1, 506) = 5.66$, $p = .018$, $d = .32$. This pattern was consistent for two forms of problematic maternal parenting: Indifferent ($F(1, 509) = 7.18$, $p = .008$, $d = .35$), and Abusive ($F(1, 509) = 5.06$, $p = .025$, $d = .30$), but not Over-Controlling ($F(1, 509) = .077$, $p = .782$).

Additional one-way ANOVAs were conducted to determine MOPS scores between psychopathic and non-psychopathic participants on the MOPS Paternal total score. Here, the psychopathic group scored significantly higher (M = 15.86, SD = 12.58) than the non-psychopathic group (M = 11.28, SD = 10.76) on endorsement of problematic paternal parenting behavior $F(1, 432) = 6.79$, $p = .009$. This pattern was only consistent for abusive paternal parenting, $F(1, 437) = 6.32$, $p = .012$, $d = .37$, leaving Indifferent, $F(1, 437) = 3.55$, $p = .060$, and Over-Controlling, $F(1, 437) = 3.66$, $p = .056$, just short of significance across psychopathic and non-psychopathic groups. MOPS scale means by psychopathy grouping can be found in Table 4.

Bivariate Correlations

To examine the associations between study variables across all participants, a series of bivariate correlations were conducted. To begin, age and IQ were found not to correlate, $r = .05$, $p = .195$. Moreover, IQ and psychopathy total scores were also found not to correlate, $r = .05$, $p = .168$. When examined at the facet level, IQ only correlated with the interpersonal facet, $r = .15$, $p < .001$, but remained uncorrelated with affective, $r = -.03$, $p = .407$ lifestyle, $r = .06$, $p = .102$,

and antisocial, r = -.01, p = .836. Additional correlations revealed no significant associations between any parenting styles, maternal or paternal, and IQ level. See Table 11.

Next, parenting styles, by parent sex, were correlated with psychopathic traits. The bivariate correlations demonstrated differential relationships between parenting styles and psychopathic traits, such that for mothers all parenting styles (i.e., indifferent, abusive, over-controlling) were correlated with PCL-R total score. The maternal parenting styles were not correlated with interpersonal or affective traits of psychopathy, but all maternal parenting styles were correlated with lifestyle and antisocial facets of psychopathy. See Table 8.

Regarding paternal parenting styles (i.e., indifferent, abusive, over-controlling), again all were correlated with PCL-R total score. However, the paternal parenting styles were not correlated with interpersonal or lifestyle traits of psychopathy, but each of paternal parenting styles were correlated with the affective facets of psychopathy. Interestingly, abusive paternal parenting was solely correlated with the antisocial facet of psychopathy. See Table 9. Here, a Fisher's r-to-z transformation produced a z score of 0.78, p = .44, suggesting a similar relationship between abuse and psychopathy total score across paternal and maternal parents.

Lastly, bivariate correlations were separately run for MOPS maternal and paternal subscales and psychopathy total scores by ethnic group (i.e., Hispanic versus non-Hispanic participants). Results indicate that for Hispanic participants, only paternal abusive parenting was predictive of PCL-R total score (r = .21, p = .001); however, for non-Hispanic participants all maternal parenting styles and the paternal indifferent facet predicted PCL-R total score. See Table 10. To answer the current study's hypothesis suggesting lower psychopathic outcomes for Hispanic participants with over-controlling paternal parents, an additional analysis was conducted. Here, a Fisher's r-to-z transformation produced a z score of 1.56, p = .059, suggesting

a similar relationship between paternal overcontrol and psychopathy total score across Hispanic and non-Hispanic groups.

Multiple Groups Structural Equation Modeling (MGSEM)

Using the same strong invariance approach as carried out with the MGCFAs, a multiple group structural equation model was specified and tested to examine how the psychopathy facets were predicted by parenting style for the Hispanic and non-Hispanic participants. In this approach, measurement invariance is specified for the psychopathy and parenting factors, but the structural components (regression of PCL-R factors onto the MOPS factors) were allowed to be freely estimated across ethnic groups. Model fit was also good (CFI = .95, RMSEA = .03).

The MGSEM results revealed that for Hispanic offenders the MOPS Father factor was a stronger predictor of PCL-R affective (β = .29, p < .05) and antisocial (β = .26, p < .05) traits. For the non-Hispanic offenders, the MOPS Mother factor was a stronger predictor of interpersonal (β = .19, p < .05), lifestyle (β = .34, p < .05), and antisocial (β = .29, p < .05) traits. In addition, the MOPS Mother factor played different roles in predicting Interpersonal traits for the Hispanic (β = -.24, p < .05) and non-Hispanic offenders (β = .19, p < .05). Moreover, for the Hispanic cases, age had a stronger inverse predictive effect on PCL-R traits, compared to the non-Hispanic participants. And lastly, for the non-Hispanic cases, IQ had a somewhat greater effect on the PCL-R factors; however, IQ was a positive predictor of interpersonal traits across both ethnic groups (β = .17, p < .05). This latter predictive effect is consistent with results reported by in Salekin, Neumann, Leistico, and Zalot (2004). See Figure 3 and Figure 4.

CHAPTER 4

DISCUSSION

Context of Sample

The following results should be interpreted with additional information in mind regarding an offender sample. First, approximately 1% of the community and 15-25% of the offender population is comprised of individuals that meet the clinical cutoff for psychopathy (i.e., PCL-R total score greater than or equal to 30) (Hare, 2003; Neumann & Hare, 2008). Within the current sample, 90.6% (*n* = 665) did not meet criteria for psychopathy, while 9.4% (*n* =69) meet the clinical threshold, thus our sample was slightly below what is typical for offenders. Of the offenders within this sample with PCL-R total scores at, or above, 30, 34 identified as non-Hispanic and 35 identified as Hispanic, suggesting an even distribution by ethnicity. Additionally, previous research using the PCL-R and the MOPS in offender samples have produced a PCL-R total score mean of approximately 18-19 (Eisenbarth, et al., 2018; Neumann, Hare, & Johansson, 2013), which is consisted with the current sample mean of 20.51 (SD = 6.68). The MOPS has not been used enough in offender samples to ensure a consistent mean score.

Additionally, it is important to contextualize the following results with an understanding of the typical racial and ethnic demographics of both general offender populations and the New Mexico population, which is the location of the current sample. According to New Mexico's Indicator-Based Information System (NM-IBIS) for 2017, approximately 48.8% of their population is Hispanic, 38.2% White, 9.1% American Indian/Alaska Native, 2.2% Black/African American, and 1.7% Asian/Pacific Islander. In relation to the United States demographic statistics from the same year, New Mexico's population contains approximately 30.7% more

Hispanic individuals than the national average (NM-IBIS, 2019). Indeed, this assists in explaining the high percentage of Hispanic individuals within our sample. Moreover, the Federal Bureau of Prisons reports that as of November, 2019, the prison population was comprised of the following racial groups: 58.7% White, 37.5% Black/African American, 2.3% American Indian/Alaska Native, and 1.5% Asian/Pacific Islander. They clarify that of the 58.7% of offenders that identify as White, 67.8% are non-Hispanic and 32.2% are Hispanic (Federal Bureau of Prisons, 2019).

Discussion of Experimental Hypotheses

The current study had several hypotheses aimed at understanding the relationships between parenting behaviors and constellations of psychopathic personality traits. Additionally, this study intended to gain an increased conceptualization of differences between Hispanic and non-Hispanic participants, while also understanding the role of cognition. Moreover, the study intended to establish measurement invariance prior to generating inferential relationships. Given the findings of previous research suggesting that the PCL-R and MOPS are well-validated, cross-cultural measures (Eisenbarth et al., 2018; Gatner, Blanchard, Douglas, Lilienfeld, & Edens, 2018; Neumann et al., 2012; Olver et al., 2018), the current study expected to replicate these findings across Hispanic and non-Hispanic offenders. As anticipated, a strong invariance multiple group confirmatory factor analysis (MGCFA) model for both the PCL-R and the MOPS was supported. As such, investigators can have confidence that they are measuring the same underlying constructs for both groups. These findings provide further evidence for the robustness of the PCL-R and MOPS as respective measures of psychopathy and parenting behaviors across different cultural groups and allow for meaningful conclusions to be drawn from the study's hypotheses.

Hypothesis 1

Maladaptive parenting styles will be associated with elevated level of psychopathy (i.e., psychopaths versus non-psychopaths)

The current study postulated that less adaptive parenting experiences, across all forms, would suggest heightened levels of psychopathic traits, measured both continuously and as a dichotomous clinical syndrome. To begin, a binary variable was created using the PCL-R to determine group differences between psychopathic and non-psychopathic offenders. Multiple ANOVA analyses indicated that offenders who met the clinical threshold for psychopathy (i.e., PCL-R scores greater than or equal to 30) had higher scores for both maternal and paternal problematic parenting. More specifically, for maternal parenting, indifferent and abusive parenting styles were significantly higher for the psychopathic group, while for paternal parenting only the abusive style was significantly higher among psychopathic offenders. The pattern of findings provides support for the first hypothesis, such that offenders obtaining scores on the PCL-R above the clinical threshold for the syndrome of psychopathy endorse significantly higher levels of problematic parenting when compared to offenders that do not meet the cutoff for psychopathy.

Additionally, bivariate correlations demonstrate the same relationship when the variables are measured continuously. Again, higher levels of problematic parenting predicted statistically higher levels of psychopathic traits. These results are consistent with prior literature and provide evidence for the salience of covariance between parenting and psychopathy (Eisenbarth et al., 2018; Farrington 2006; Walsh et al., 2018). When correlations were examined by psychopathy facets, all problematic maternal parenting predicted elevations on lifestyle and antisocial facets, all while problematic paternal parenting predicted higher scores on the affective facet. Interestingly, only paternal abuse parenting predicted an elevation on the antisocial facet.

The maternal findings are consistent with the study's expectation that poor parenting would predict lifestyle and antisocial facets, given that previous research indicates a stronger relationship with problematic parenting and externalizing behaviors, through severed attachment relationships (Casey, Rogers, Burns, & Yiend, 2013). Moreover, paternal abuse predicting antisocial traits is also well researched and founded within Social Learning Theory (Dargis, Newman, & Koenigs, 2016; Donahue, McClure, & Moon, 2014; Poythress, Skeem, & Lilienfeld, 2006). Indeed, it was not expected that maladaptive paternal parenting practices would predict the affective facet; however, a recent study examining relationships between oxytocin, psychopathic traits, and invalidating childhood environments yielded results suggesting a that invalidating environments were associated with affective traits of psychopathy. The authors indicated that parent-child attachment relationships were a likely pathway for these associations (Verona, Murphy, Bresin, 2018). This finding may also be unique to the current study's male sample, suggesting important same-sex affective modeling.

Hypothesis 2

> *Abusive parenting will demonstrate the greatest difference between psychopathic and non-psychopathic groups when compared to other maladaptive styles (i.e., indifference, over-control).*

As discussed above, ANOVAs that examined type of parenting, indicated abusive parenting as particularly salient and problematic across both parental sexes, but particularly for paternal parents. In fact, effect sizes were all small and similar for the maternal parenting styles that demonstrated significance between psychopathic and non-psychopathic offenders. Again, this may indicate a particular importance for same-sex modeling, given that our sample was all male and the existence of previous research that has evidenced the importance of same-sex parent-child relationships on learned behavior (Chang et al., 2003; Eisenbarth et al., 2018).

While the pattern of results found in the current study does provide support for hypothesis two, particularly for paternal parents, it requires careful explanation.

First, it is well supported by previous literature that abusive parenting is a highly detrimental parenting style for the onset of personality pathology and psychopathy (Bak, Krabbendam, Janssen, de Graaf, Vollebergh, & van Os, 2005; Bandura, 1978; Borja & Ostrosky, 2013; Heyman & Smith Slep, 2002; Kolla, Malcolm, Attard, Arenovich, Blackwood, & Hodgins, 2013; Graham, Kimmonis, Wasserman, & Kline, 2012; Schimmenti, Di Carlo, Passanisi, & Caretti, 2015; Poythress, Skeem, & Lilienfeld, 2006). Further, these findings are well supported by Attachment Theory, such that abusive parenting practices are most commonly associated with a disorganized attachment style that is characterized by violent, risky, and deviant behavioral profiles (Ainsworth, 2010; Ainsworth & Bowlby, 1954; Bowlby, 1969; Collins & Feeney, 2000). This transmission of behavior is then explained by Social Learning Theory and the Internal Working Model. Specifically, offspring are modeled, from their parents, deficits in affective and cognitive regulation, as well as aggression and violence, which then becomes the typical pattern of interaction between the child and the caregiver. Next, offspring internalize their experiences and continue to demonstrate these behaviors in their future interactions with their environment (Bandura & Walters, 1959; O'Connor et al., 2013).

Importantly, if broad problematic parenting practices are related to psychopathy, and if abuse is particularly salient, then both parenting and trauma treatment are illuminated as possible intervention strategies for psychopathic traits and psychopathy as a syndrome. Additional research has also demonstrated the shared importance of both environmental factors and genetics in the conceptualization of psychopathy, particularly in early childhood (Tuvblad, Fanti, Andershed, Collins, & Larsson, 2017) and there is a school of researchers that have begun to

conceptualize psychopathy as a trauma-based disorder (Woodfield, Dhingra, Boduszek, & Debowska, 2016). If poor parenting, namely abusive parenting behaviors, serve as a proxy for childhood maltreatment, then our results add validity to this conceptualization and may implicate trauma treatment as a possible treatment for both internalizing and externalizing traits of psychopathy.

Moreover, parenting interventions have been demonstrated to be highly effective as a treatment modality for broad behavior problems in youth. International research efforts suggest that the implementation of parent training programming serves to strengthen the parent-child interaction and model appropriate behaviors for the youth leading to decreased problematic externalizations (Gardner, Leijten, Harris, & Mann, 2019; Shelleby, & Shaw, 2014). More specifically, Parent-Child Interaction Therapy (PCIT), an evidence-based, manualized therapeutic treatment intervention for young children and caregivers, has shown promising outcomes for treating children with disrupted caregiver attachment (Eyberg, Nelson, & Boggs, 2008), maltreatment history (Lieneman, Brabson, Highlander, Wallance, & McNeil, 2017) and callous-unemotional traits and conduct problems (Kimonis, Bagner, Linares, Blake, & Rodriquez, 2014). Indeed, if psychopathic traits are a product of poor parenting behaviors, then parenting programs should be implemented as early intervention.

One interesting finding was that maternal indifference, across the overall sample, was higher for psychopathic offenders compared to their non-psychopathic counterparts. While the effect size was small, it appears that a cold and/or distant maternal caregiver is salient. Perhaps this finding is best explained by long-standing societal expectations of mothers serving as the emotional parent and conventionally providing the majority of the caregiving (Russell & Russell, 1987). Importantly, our sample had notably less paternal caregivers, suggesting that many

offenders were raised in a single-parent, maternal household. As such, an indifferent mother, in the absence of a paternal caregiver, would be particularly detrimental to offspring development and safety.

Hypothesis 3

> *Problematic maternal and paternal parenting will more strongly predict the lifestyle and antisocial facets when compared to the affective and interpersonal facets.*

In examining correlations between scales, the MOPS Maternal and Paternal total scores were both significantly correlated with PCL-R total score, suggesting that problematic parenting practices are broadly predictive of psychopathic traits. Moreover, all types of maladaptive maternal parenting (i.e., indifferent, abusive, and over-controlling) were correlated with only the lifestyle and the antisocial facets of psychopathy. This finding provides support for the current study's third hypothesis and is consistent with the literature suggesting that poor parenting behaviors are most associated with a demonstration of lifestyle and antisocial (i.e., externalizing) traits of psychopathy through modeled behavior (Dargis, Newman, & Koenigs, 2016; Eisenbarth, Krammer, Edwards, Kiehl, Neumann, 2018; Poythress, Skeem, & Lilienfeld, 2006). This also provides additional evidence for bidirectional parent-child relationships, such that as externalizing symptoms are exhibited by both the parent and the child it impacts the expression, and possible escalation, of behaviors for both parties.

In contrast, all forms of poor paternal parenting were correlated with the affective facet, while only abusive paternal parenting was significantly correlated with the antisocial facet. This provides partial support to hypothesis three, such that the antisocial trait is consistently predicted by poor parenting practices and again, highlights the salience of abuse. Indeed, it was unexpected that problematic paternal parenting would predict elevation for affective traits; however, the previous data is admittedly scarce and preliminary. However, as previously mentioned, a recent

study examined biological factors, psychopathic traits, and problematic childhood environments and found that invalidating environments were associated with affective traits of psychopathy. The authors speculated that attachment was likely an underlying mechanism explaining the route of these relationships (Verona, Murphy, Bresin, 2018). Their results and rationale are largely consistent with the current study, which provides additional evidence for the importance of parental attachment relationships in predicting both externalizing and internalizing symptoms of psychopathy.

While much additional research is required, this relationship may also be explained by modeled affective dysregulation. Literature suggests that poor affective modulation and emotional dysregulation underlies the relationship between severed parental attachment and traits of psychopathy (Borja, & Ostrosky, 2013; Burns, Roberts, Egan, & Kane, 2015; Goa, Raine, Chan, Venables, & Mednick, 2010) and individuals with high traits of psychopathy show significant emotion regulation disturbances (Garofalo, Neumann, & Mark, 2020). Moreover, it is well documented that modeling is a robust means of learned behavior, particularly throughout childhood (Bandura, 1978; Borja & Ostrosky, 2013). As such, problematic paternal parenting, in any form, likely involve poorly modeled aspects of affective dysregulation, leading to severs in parental attachment relationships, and offspring encoding of behavioral and affective practices (O'Connor et al., 2013). Again, this relationship is likely bidirectional in nature.

Additionally, the current study explored these relationships across participant ethnicity, using ANOVAs, and found that Hispanic and non-Hispanic offenders did not differ on their total PCL-R scores, affective score, or lifestyles scores; however, Hispanic participants endorsed higher antisocial traits of psychopathy, while non-Hispanic participants generated high scores on interpersonal traits. It should be noted that the effect sizes here were small, but not negligible.

While hypotheses were not made regarding this analysis due to lack of prior research, a study examining PCL-R scores and rates of recidivism in a sample of indigenous and non-indigenous offenders in Canada provides additional support for differences in antisocial traits by ethnic and cultural background. Findings indicated higher levels of antisocial traits and rates of recidivism in the indigenous participants when compared to their non-indigenous counterparts (Olver, Neumann, Sewall, Lewis, Hare, & Wong, 2018). The current study findings may also be explained in part by traditional cultural expectations. More specifically, Hispanic and collectivist cultures at large are less tolerant of, and sensitive to, internalizing symptoms (Liang, Matheson, & Douglas, 2016). As such, Hispanic participants may be more familiar with the expression and identification of pathology that is externalizing (i.e., antisocial).

Hypothesis 4

> *Same-sex (i.e., sons and fathers) dyads will demonstrate stronger associations than opposite-sex (i.e., sons and mothers) dyads for psychopathic traits, particularly for Hispanic participants.*

Using additional bivariate correlations, measured across the entire sample, psychopathic traits were approximately equally predicted by both maternal and paternal problematic parenting behaviors. Given the prominence of abusive paternal parenting as a sole predictor of psychopathic traits, discussed above, a Fisher's r-to-z transformation was conducted to investigate significance between maternal and paternal abuse parenting on psychopathy. While significance was not found and thus the finding not supportive of hypothesis four, the previous literature is mixed regarding the salience of same-sex parent-child dyads on the impact of personality feature development (Lytton & Romney, 1991; Chang, Schwartz, Dodge, McBride-Chang, 2003). Moreover, when parenting sex is considered separately across ethnic groups, there are nuanced differences that warrant discussion and provide some support for the hypothesis.

A strong invariance approach was used to test a structural equation model and examined how the MOPS parenting factors predicts the PCL-R facets for both the Hispanic and non-Hispanic participants. Model fit was good. Specific to Hispanic offenders, the MOPS paternal factor was the strongest predictor of PCL-R traits, particularly affective and antisocial, compared to the maternal factor, which demonstrated an inverse relationship. An unexpected negative relationship between MOPS maternal and PCL-R interpersonal traits was also revealed. However, the strong association found between poor paternal parenting and increased psychopathic traits within the affective and antisocial facets provides support the fourth hypothesis. The literature to date suggests a salience within Hispanic culture surrounding the paternal relationship (Eun, Paksarian, He, & Marikangas, 2018; Pinquart & Kauser, 2018) and the structure of traditional Hispanic families is predominantly patriarchal (Galanti, 2003), which may help explain why paternal parenting was a more robust predictive factor on psychopathic traits for Hispanic offenders. Also, as previously discussed, paternal modeling, across both internalizing (i.e., affective) and externalizing (antisocial) traits, appears to be particularly important for Hispanic offenders as evidence by the results of the current study. This suggests that the impact of parent-child sex dyads must be further explored in a cultural context, given that much previous research did not account for this variation.

In contrast, the MGSEM revealed that for non-Hispanic offenders, the MOPS maternal factor was a strong (positive) predictor, specifically for interpersonal, lifestyle, and antisocial traits. This may be best explained by non-Hispanic cultures conceptualization of mothers serving as the emotional parent and traditionally providing the majority of the caregiving (Russell & Russell, 1987). As such, maladaptive caregiving from the primary caregiver would be more impactful for this group. Overall, these findings suggest that parental sex is more complex and

must be considered within the context of additional variables, such as ethnicity. It also must be considered that the current study was comprised of an all-male sample and previous findings have indicated that caregivers engage in differential forms of caregiving based on offspring sex (Lieberman, Doyle, & Markiewicz, 1999). As such, it should not be ignored that dyads could not be comprehensively explored within this sample and additional relationships may exist.

Hypothesis 5

> *Given the cultural norms within the Hispanic community surrounding a greater acceptance of authoritarian parenting, the over-controlling parenting style will demonstrate lower psychopathic traits for Hispanic versus non-Hispanic participants.*

When correlations were explored by participant ethnicity, paternal abusive parenting was predictive of elevated psychopathy for Hispanic participants, while all problematic maternal parenting and paternal indifference was predictive of elevated psychopathic traits for non-Hispanic participants. Moreover, ANOVAs revealed that Hispanic participants endorsed higher paternal indifference and lower maternal abuse than their non-Hispanic counterparts, which may help contextualize this finding. Indeed, if paternal indifference is more commonplace within our sample for Hispanic offenders then perhaps the impact of paternal parenting would be less predictive of outcome.

While not a direct hypothesis of this study, these results lead to the examination of this hypothesis such that a Fisher's r-to-z transformation demonstrated a lack of statistical significance between paternal overcontrol and psychopathy total score across Hispanic and non-Hispanic groups. While previous data suggests that authoritarian parenting (i.e., over-controlling) is less detrimental and more widely accepted within Hispanic communities, additional literature suggests that fit of parenting behavior is more important than the style. Thus, some children may thrive within an authoritarian parenting style, while others do not. This is known as Goodness-of-

fit theory and was first coined by researchers investigating longitudinal data aimed at understanding relationships between temperament and child development (Bird, Reese, Tripp, 2006; Thomas, Chess, & Birch, 1968; Thomas & Chess, 1977).

Exploratory Analyses

This study explored IQ and age as predictive factors of psychopathy. The current study was largely focused on gleaning a deeper understanding of the associations and relationships between the variables measured. A series of bivariate correlations, conducted on the entire sample, showed no association between age and IQ, indicating that they should be measured separately. As such, they were entered as independent variables in the structural equation models to come. Next, correlations indicated that IQ and psychopathy total scores were not correlated; however, IQ was found to positively correlate with the interpersonal facet scores. While this was an exploratory research question, these findings provide additional support for the notion that psychopathy and IQ are best measured using the facet scores (Salekin, Neumann Leistico, & Zalot, 2004). Further, this aligns with the findings of Salekin, Neumann, Leistico, and Zalot (2004) indicating that IQ is positive associated with interpersonal traits of psychopathy. Additional relationships regarding IQ and psychopathy were examined in greater depth in the structural equation models below.

Moreover, for the Hispanic cases, age had a stronger inverse effect on PCL-R traits, compared to the non-Hispanic participants and for the non-Hispanic cases, IQ had a somewhat greater effect on the PCL-R factors; however, it was a predictor of interpersonal traits across both ethnic groups. While an explanation for the differential relationships found between age, PCL-R scores, and ethnic groups is unclear, there is evidence that criminal behavior and psychopathic traits decrease over the lifespan (Hirschi & Gottfredson, 1983). However, this

relationship has been almost exclusively measured in Western cultures, and preliminary research exploring these associations in collectivist and non-Western culture indicates a need for further investigation (Steffensmeier, Lu, & Kumar, 2019).

The patterns of effects regarding IQ are consistent with results reported by in Salekin, Neumann, Leistico, and Zalot (2004) and provided support for the current study's exploratory research question. That IQ positively predicted interpersonal traits fits with the idea that better cognitive ability is likely required for engaging in interpersonal manipulation and charming glibness (Casey, Rogers, Burns, & Yiend, 2013; Donahue, McClure, & Moon, 2014). The negative association found between IQ and affective traits fits with recent research indicating that this trait domain is particularly associated with poorer emotional regulation (Garofalo, Neumann, Mark, 2020), and of course poorer emotion regulation may be due to early attachment disturbances.

As discussed above, parenting and psychopathy demonstrate a related association to parenting and cognitive functioning. Namely, poorer parenting predicts both elevations in psychopathic traits and lower levels of intellectual performance (Chong, et al., 2016). Yet, within the current sample, parenting did not predict levels of IQ. While parenting plays a role in cognitive development and may influence overall IQ scores (Sethna et al., 2017), deriving intellectual capacity is more complex than just parenting (i.e., genetics, education, nutrition, physical health, ect.) (Davies et al., 2011). While some research suggests that heritability is more salient than environmental factors (Galton, 2012), this relationship changes when socioeconomic status is considered. Indeed, in lower SES families, environment is a stronger predictor of IQ, while in higher SES families, genetics is more robust (Turkheimer, Haley, Waldron, d'Onofrio, & Gottesman, 2003). While the familial income of the offenders within this sample is unknown,

it would be expected that parenting would demonstrate an association with IQ within the current study. The lack of predictive relationships found between parenting and IQ in the current sample are puzzling, particularly given that gene-environment interaction is well documented for IQ outcome (Sauce & Matzel, 2018), yet perhaps additional variables are required to fully demonstrate the complexities between parenting and intellectual development.

Moreover, research indicates that parenting is not unidirectional, but rather bidirectional. As such, children and parents are continuously engaging in back-and-forth interactions that impact and alter their next pattern of interactions. Research specific to cognitive development has found that children evoke parenting reactions in a transactional and bidirectional nature. Therefore, based on genetic predispositions, child temperament, parenting styles, and a host of additional environmental factors, children elicit varying levels of stimulation which then impacts their development (Tucker-Drob & Harden, 2011). Feasibly, in measuring parenting as a unidirectional predictor of IQ the current study is missing the bidirectional nature of the parent-child relationship and thus not capturing the dynamic association between parent-child transactions and cognitive development.

Finally, given the relationships found in the current sample between IQ, facets of psychopathy, and parenting, IQ may serve as an independent factor, such that with varying levels of IQ a different constellation of psychopathic traits can be more strongly predicted. As such, IQ, parenting, and psychopathy should be considered together, but as independent factors and other variables, such as genetics, education, SES, and bidirectional parent-child relationships, must also be considered in conceptualizing the development of cognitive abilities.

Limitations, Implications, and Future Research

This study provided a host of novel information and was methodologically strong, yet

limitations were present. As such, the results and conclusions should be considered in the context of these limitations. First, self-report and retrospective data collection rely on accurate and truthful responding. Participants may have responded to items in a socially desirable manner or they may have indicated exaggerated responses. Moreover, retrospective reporting relies on the accurate recall of events, some of which may have occurred multiple years prior. Additionally, encoding these events may be distorted or incorrect causing inaccurate reporting. However, the current study was focused on participant perception and as such, these flaws to self-reporting are less impactful and previous research has indicated that, particularly in regard to emotional content, retrospective reporting on childhood environment is valid and moderately correlated with prospective reporting (Bell & Bell, 2018). Ideally, longitudinal data would provide greater clarity on these relationships with more concrete information from childhood.

A second limitation is the sample itself. While large enough to provide ample power, it is an all-male sample, recruited from one location. Location and sex biases may be present and/or results may only be generalizable to the region from which the sample was recruited and males. As such, future research should focus on replication in a co-ed sample. Moreover, the study provided new and needed information regarding paternal parenting; however, some results could not be fully explained given the lack of precedent research involving fathers and using the MOPS within an offender sample.

Third, some of the subscale alpha values within the current sample were slightly below an ideal range. While true, mean interitem correlation (MIC) values were adequate, suggesting that scale reliability is likely not compromised. Future research should focus on scale measurement within a similar sample to ensure internal consistency.

Lastly, while outside of the scope of the current project, parent-child goodness of fit and

the transactional interplay of parent-child relationships was not accounted for. Given the importance of these occurrences and their salience in making meaning of outcomes, future research would benefit from investigating goodness-of-fit and bidirectionality in the context of parental, personality, and cultural variables. Additionally, trauma history was not accounted for outside the scope of abusive parenting. Given the impactful nature of maltreatment experiences on development, future research should control for participants trauma history.

The current study highlighted the importance of the caregiving relationship as a promising intervention tool. As such, parenting programs should more readily be implemented to treat youth-defiant behaviors and to repair severs to secure attachment relationships. Moreover, the current findings provide additional evidence for the argument that personality pathology, in this case psychopathic traits, are often a product of trauma and maltreatment in childhood. Therefore, treating trauma may have a significant impact on the promotion of more adaptive personality features. This is an area for future research. This study also added to the cross-cultural literature and provided additional psychometric strength to the scales used. Additional research should focus on expanding the scope of cultures examined to determine if invariance carries across other ethnic and racial groups. Proudly, this endeavor also provided a more nuanced understanding of personality traits and a comprehensive examination of parenting behavior at the subtype level. Importantly, data was collected on paternal caregivers, which is largely scarce in parenting research and should be a focus of future research.

Conclusions

The current study recruited a sample of Hispanic and non-Hispanic adult, male offenders to provide additional clarity surrounding the relationship between poor parenting behavior and psychopathic traits. Moreover, it served as an exploratory investigation of measurement variance

and differential relationships across ethnic groups. Finally, the current project aimed to explore the role of cognitive functioning and age on the construct of psychopathy. Overall the data indicated that psychopathy and parenting styles can be measured accurately across Hispanic and non-Hispanic offenders and demonstrated good robustness of measurement for the PCL-R and MOPS scales. The results also revealed nuanced differences in parenting, psychopathic traits, and cognitive development across ethnicity.

As expected, the data indicated abusive parenting practices as the most predictive of psychopathic traits and illuminated antisocial features as the most likely product. On an aggregate level, the sample did not indicate a salience for same-sex dyads; however, nuanced relationships with parental sex were revealed by participant ethnicity, suggesting cultural implications. Lastly, the results suggested that IQ is not globally associated with psychopathy; however, it did demonstrate a relationship with interpersonal psychopathic traits. While not within the scope of the current project, the results should be interpreted with the understanding that parent-child relationships are bidirectional and transactional and do not exist without the influence of multiple external variables not measured in this study.

Table 1

Subject Demographics

Variable		Overall Sample (N = 734)
Age, *M (SD)*		34.07 (9.16)
Gender % (*n*)	Male	100 (734)
Ethnicity % (*n*)	Hispanic	57.1 (419)
	Non-Hispanic	42.9 (315)
Intelligence Quotient (IQ), *M (SD)*		96.76 (13.22)

Note. The table above provides demographic information, mean and standard deviation, for the participants within the current sample. The overall sample size was 734.

Table 2

Scale Descriptive Statistics: Overall Sample

Variable	Mean (SD)	Skewness	Kurtosis
Psychopathy Checklist – Revised (PCL-R) (N = 734)	20.51 (6.68)	-.09 (.09)	-.33 (.18)
Affective	.91 (.51)	-.03 (.09)	-.80 (.18)
Interpersonal	.51 (.48)	1.05 (.01)	.65 (.18)
Lifestyle	1.10 (.43)	-.08 (.09)	-.71 (.18)
Antisocial	1.43 (.46)	-.84 (.10)	.59 (.19)
Measure of Parental Style (MOPS)			
Maternal (N = 511)	9.00 (8.37)	1.64 (.11)	2.44 (.22)
Indifferent	.48 (.71)	1.89 (.11)	2.92 (.22)
Abusive	.44 (.68)	2.06 (.11)	3.84 (.22)
Over-Controlling	.99 (.68)	.65 (.11)	.01 (.22)
Paternal (N = 439)	11.73 (11.02)	1.13 (.12)	.45 (.23)
Indifferent	.77 (.97)	1.17 (.12)	.05 (.23)
Abusive	.71 (.92)	1.30 (.12)	.50 (.23)
Over-Controlling	.90 (.72)	.61 (.12)	-.37 (.23)
Weschler Adult Intelligence Scale, 4th Edition (N = 734)	96.76 (13.22)	.29 (.09)	-.25 (.18)

Note. The table above provides scale means, standard deviations, and measures of normality for the measures administered to participants within the current sample. Facet means are reported as mean item facet scores (facet sum total / # of facet items).

Table 3

Scale Descriptive Statistics by Ethnic Group

Variable	Sample	Mean	Standard Deviation
Hispanic Participants			
PCL-R Total Score	419	20.78	6.38
PCL-R Affective	419	.91	.50
PCL-R Interpersonal	419	.47	.43
PCL-R Lifestyle	419	1.12	.43
PCL-R Antisocial	419	1.50	.42
MOPS-M Indifferent	291	.43	.68
MOPS-M Abusive	291	.38	.59
MOPS-M Over-Controlling	291	.97	.68
MOPS-P Indifferent	248	.69	.93
MOPS-P Abusive	248	.65	.87
MOPS-P Over-Controlling	248	.90	.71
Non-Hispanic Participants			
PCL-R Total Score	315	20.16	7.04
PCL-R Affective	315	.91	.52
PCL-R Interpersonal	315	.55	.53
PCL-R Lifestyle	315	1.09	.43
PCL-R Antisocial	315	1.34	.49
MOPS-M Indifferent	220	.54	.74
MOPS-M Abusive	220	.52	.79
MOPS-M Over-Controlling	220	1.02	.68
MOPS-P Indifferent	191	.88	1.01
MOPS-P Abusive	191	.79	.98
MOPS-P Over-Controlling	191	.90	.72

Note. The table above provides scale means, standard deviations, and sample size for the Measure of Parental Style Maternal and Paternal (MOPS-M and MOPS-P) and the Psychopathy Checklist- Revised (PCL-R) by ethnic group (i.e., Hispanic and non-Hispanic). Facet means are reported as mean item facet scores (facet sum total / # of facet items).

Table 4

Measure of Parental Style (MOPS) Mean Scores by Psychopathy Grouping

Variable	Sample Size (n)	Mean	Standard Deviation
PCL-R Total Score $\geq$ 30			
MOPS-M Indifferent	50	.73	.89
MOPS-M Abusive	50	.64	.81
MOPS-M Over-Controlling	50	1.02	.66
MOPS-P Indifferent	43	1.04	1.09
MOPS-P Abusive	43	1.05	1.07
MOPS-P Over-Controlling	43	1.20	.79
PCL-R Total Score < 30			
MOPS-M Indifferent	461	.45	.69
MOPS-M Abusive	461	.42	.67
MOPS-M Over-Controlling	461	.99	.68
MOPS-P Indifferent	396	.75	.96
MOPS-P Abusive	396	.68	.90
MOPS-P Over-Controlling	396	.88	.71

Note. The table above provides scale means, standard deviations, and sample for the MOPS-M (maternal) and the MOPS-P (paternal) subscales by psychopathy total score groupings. PCL-R is the abbreviation for the Psychopathy Checklist- Revised.

Table 5

Intercorrelations among PCL-R Subscales

	Total	Interpersonal	Affective	Lifestyle	Antisocial
Total Score	----				
Interpersonal	.68**	----			
Affective	.70**	.41**	----		
Lifestyle	.75**	.39**	.34**	----	
Antisocial	.70**	.26**	.35**	.41**	----

Note. The above table demonstrates the bivariate correlation values within the PCL-R scale regarding total score and facet scores. All subscales are correlated. * indicates significance at the $p < .05$ level and ** indicates significance at the $p < .01$ level.

Table 6

Intercorrelations among MOPS-Maternal Subscales

	Total	Indifferent	Abusive	Over-Controlling
Total Score	----			
Indifferent	.85**	----		
Abusive	.90**	.69**	----	
Over-Controlling	.61**	.20**	.44**	----

Note. The above table demonstrates the bivariate correlation values within the MOPS Maternal scale regarding total score and subscales. All subscales are correlated. * indicates significance at the $p < .05$ level and ** indicates significance at the $p < .01$ level.

Table 7

Intercorrelations among MOPS-Paternal Subscales

	Total	Indifferent	Abusive	Over-Controlling
Total Score	----			
Indifferent	.86**	----		
Abusive	.91**	.64**	----	
Over-Controlling	.65**	.26**	.59**	----

Note. The above table demonstrates the bivariate correlation values within the MOPS Paternal scale regarding total score and subscale scores. All subscales are correlated. * indicates significance at the $p < .05$ level and ** indicates significance at the $p < .01$ level.

Table 8

Summary of Bivariate Correlation Results for Maternal Parenting and Psychopathic Traits in Total Sample.

	1	2	3	4	5	6	7	8	9
1. PCL-R Total	----								
2. PCL-R: Interpersonal	.68**	----							
3. PCL-R: Affective	.70**	.41**	----						
4. PCL-R: Lifestyle	.75**	.39**	.34**	----					
5. PCL-R: Antisocial	.70**	.26**	.35**	.41**	----				
6. MOPS-M Total	.16**	.03	.15	.15**	.18**	----			
7. MOPS-M Indifferent	.15**	.03	.09	.12**	.16**	.85**	----		
8. MOPS-M Abusive	.11*	.03	.01	.11*	.15**	.90**	.69**	----	
9. MOPS-M Over-Controlling	.11*	.02	.04	.12**	.12*	.61**	.20**	.44**	----

Note. Scales within the table above are abbreviated and reflect the measures used to assess the constructs of interest. PCL-R (Psychopathy Checklist- Revised) and the four facet scores: Interpersonal, Affective, Lifestyle, and Antisocial, MOPS-M (Measure of Parental Style- Maternal) and the three subscales: Indifferent, Abusive, and Over-Controlling. *$p < .05$, **$p < .01$.

Table 9

Summary of Bivariate Correlation Results for Paternal Parenting and Psychopathic Traits in Total Sample.

	1	2	3	4	5	6	7	8	9
1. PCL-R Total	----								
2. PCL-R: Interpersonal	.68**	----							
3. PCL-R: Affective	.70**	.41**	----						
4. PCL-R: Lifestyle	.75**	.39**	.34**	----					
5. PCL-R: Antisocial	.70**	.26**	.35**	.41**	----				
6. MOPS-P Total	.15**	.04	.15**	.05	.14**	----			
7. MOPS-P Indifferent	.11*	.02	.11*	.04	.10	.86**	----		
8. MOPS-P Abusive	.16**	.05	.15**	.06	.17**	.91**	.64**	----	
9. MOPS-P Over-Controlling	.11*	.06	.12*	.03	.07	.65**	.26**	.59**	----

Note. Scales within the table above are abbreviated and reflect the measures used to assess the constructs of interest. PCL-R (Psychopathy Checklist- Revised) and the four facet scores: Interpersonal, Affective, Lifestyle, and Antisocial, MOPS-P (Measure of Parental Style- Paternal) and the three subscales: Indifferent, Abusive, and Over-Controlling. *$p < .05$, **$p < .01$.

Table 10

Correlations between MOPS Subscales Across Parental Sex and PCL-Total Scores by Ethnicity

Variable	Pearson's r
PCL-R Total Score in Hispanic Participants	
MOPS-M Indifferent	.06
MOPS-M Abusive	.04
MOPS-M Over-Controlling	.19
MOPS-P Indifferent	.08
MOPS-P Abusive	.21**
MOPS-P Over-Controlling	.18
PCL-R Total Score in non-Hispanic Participants	
MOPS-M Indifferent	.25**
MOPS-M Abusive	.19**
MOPS-M Over-Controlling	.15**
MOPS-P Indifferent	.15*
MOPS-P Abusive	.11
MOPS-P Over-Controlling	.03

Note. Scales within the table above are abbreviated and reflect the measures used to assess the constructs of interest. PCL-R (Psychopathy Checklist- Revised), MOPS-M (Measure of Parental Style- Maternal), MOPS-P (Measure of Parental Style- Paternal) and the three subscales: Indifferent, Abusive, and Over-Controlling. *$p < .05$, **$p < .01$.

Table 11

Correlations between MOPS Subscales, Age, and IQ Across the Overall Sample

Variable	Age (*r*)	IQ (*r*)
MOPS-M Indifferent	-.03	.03
MOPS-M Abusive	.01	.05
MOPS-M Over-Controlling	-.004	.06
MOPS-P Indifferent	.02	.01
MOPS-P Abusive	.07	.05
MOPS-P Over-Controlling	.04	.01

Note. Scales within the table above are abbreviated and reflect the measures used to assess the constructs of interest. MOPS-M (Measure of Parental Style- Maternal), MOPS-P (Measure of Parental Style- Paternal) and the three subscales: Indifferent, Abusive, and Over-Controlling. *$p < .05$, **$p < .01$.

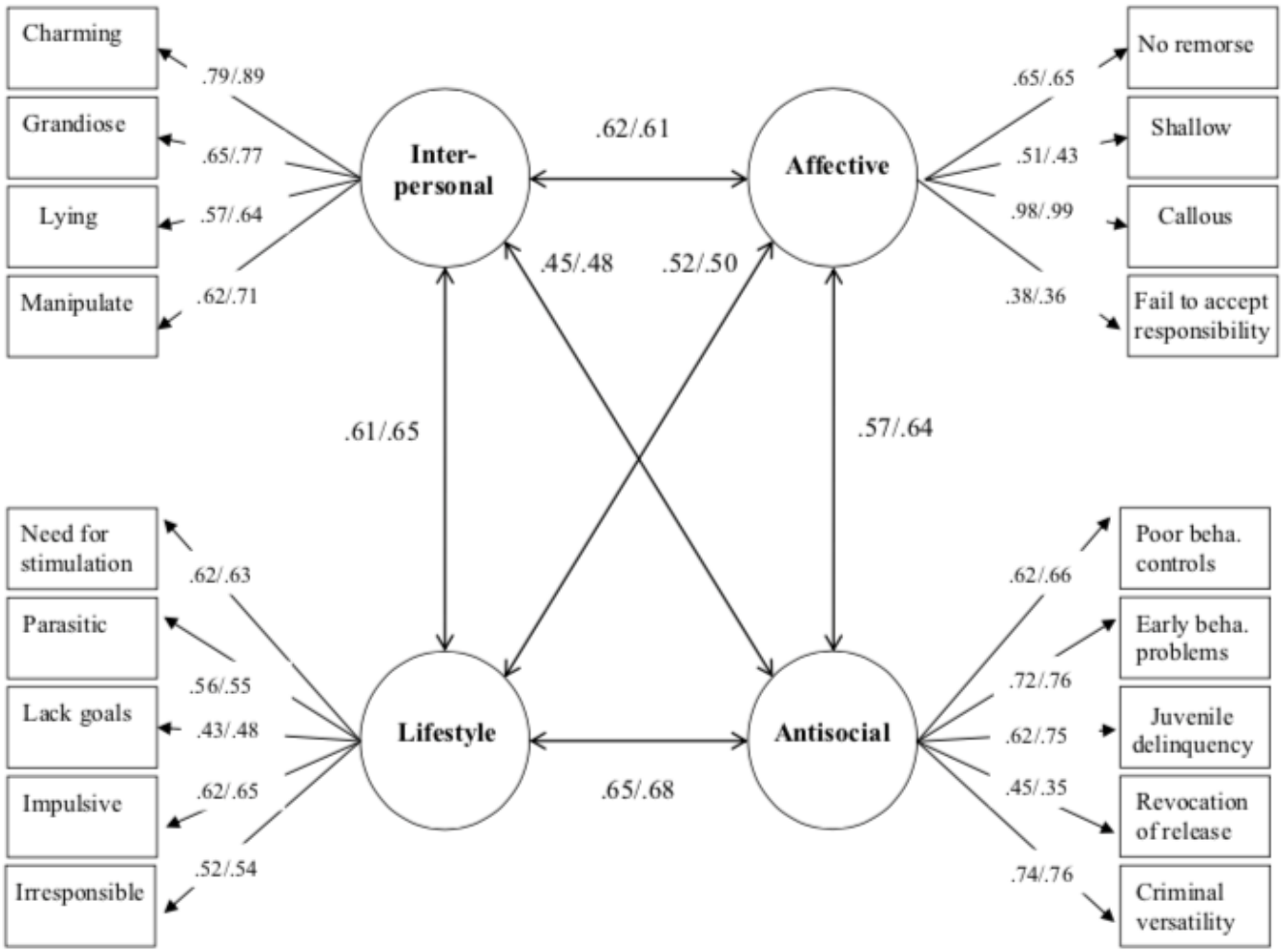

Figure 1. Strong invariance multiple group confirmatory factor analysis: Hispanic (*N* = 419)/non-Hispanic (*N* = 315) for PCL-R.

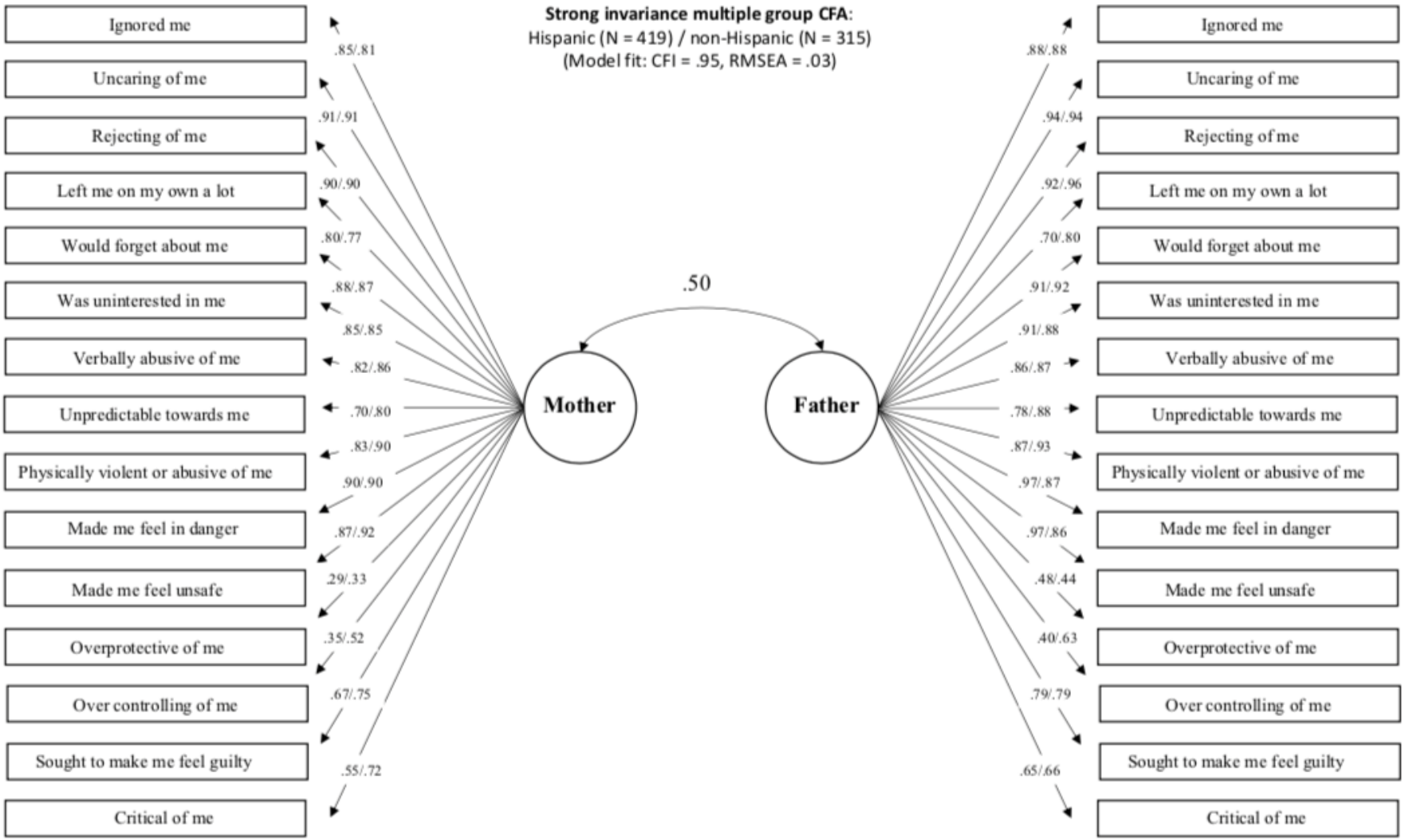

Figure 2. Strong invariance multiple group confirmatory factor analysis: Hispanic (*N* = 419)/non-Hispanic (*N* = 315) for MOPS.

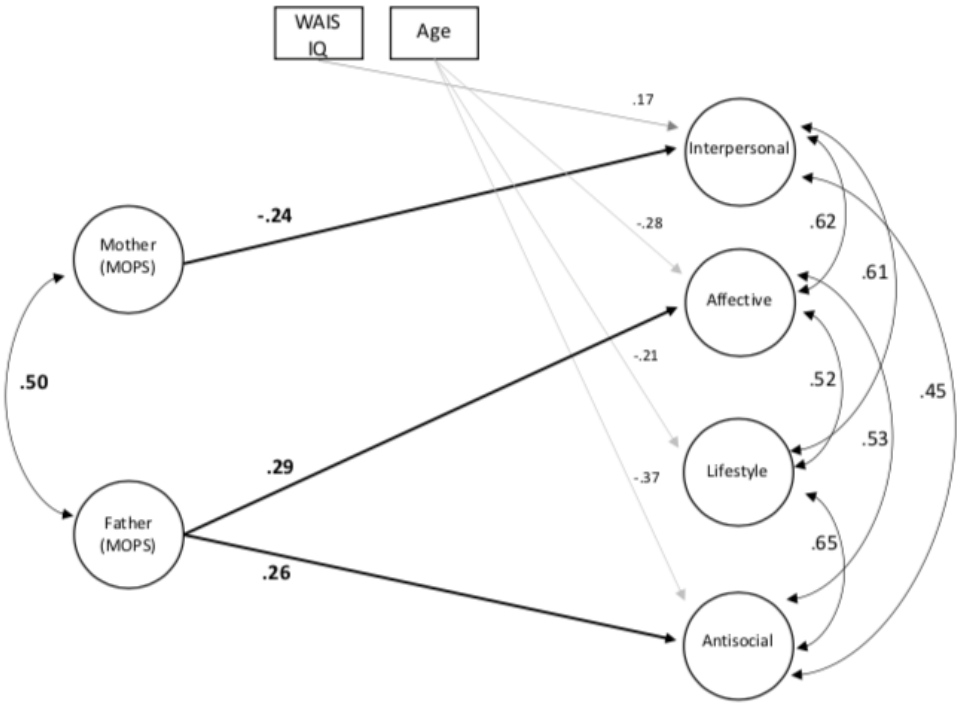

Figure 3. Structural equation modeling results: MOPS factors, age, IQ predicting PCL-R factors – Hispanic participants.

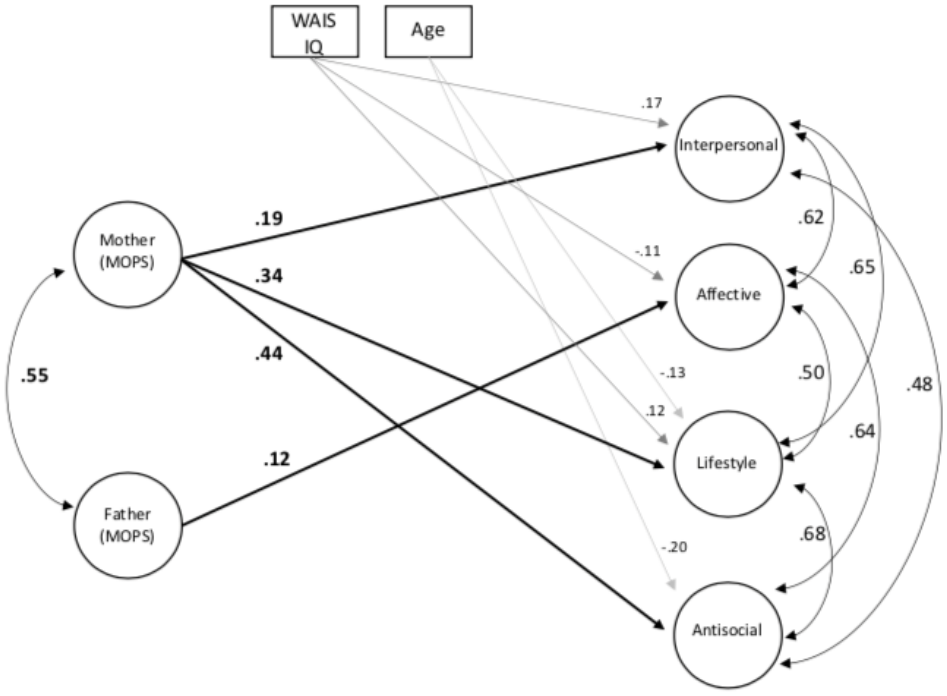

Figure 4. Structural equation modeling results: MOPS factors, age, IQ predicting PCL-R factors – non-Hispanic participants.

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